TERMINATING MARKER CONNECTOR AND TERMINATING MARKER CIRCUITS

NUMBER	TITLE
SC 501-1	OVER-ALL OPERATIONS
SC 502-1	TIMING CIRCUITS
SC 503-1	INTERCEPT CALLS
SC 504-1	NO TEST AND NO HUNT CALLS
SC 505-1	ALL CHANNELS BUSY CONDITIONS
SC 506-1	TERMINAL HUNTING LINES, GROUND TEST
OS 501-1	SEIZURE, SENDER PREFERENCE, MARKER PREFERENCE
OS 502-1	RECEIVING LEAD CONTINUITY
OS 503-1	OPERATION OF (LE) RELAYS, TEST FOR FALSE GROUND ON (NS) LEADS
OS 504-1	TRANSLATION, SEIZURE OF NGC, OPERATION OF (HB) RELAYS
OS 505-1	CHECK OF MARKER PREFERENCE CHAIN
OS 506-1	SEIZURE OF INCOMING LINK AND CONNECTOR
OS 507-1	CHECK OF MARKER PREFERENCE CHAIN CIRCUIT
OS 508-1	INCOMING LINK AND CONN. START LEADS
OS 509-1	OPERATION OF TRUNK (F) RELAY, INCOMING PRIMARY SELECT MAGNETS
OS 510-1	OPERATION OF (TB) RELAY
OS 511-1	NF AND NC CROSS CONNECTIONS
OS 511-2	PT CROSS CONNECTIONS
OS 512-1	LINE CHOICE AND L.L. SEIZURE
OS 513-1	INCOMING SELECT MAGNET OPERATION
OS 514-1	CHANNEL TEST 10-10 INSTALLATION
OS 515-1	CHANNEL SELECTION
OS 515-2	OPERATION OF L.L. SELECT MAGNET
OS 516-1	CHANNEL TEST 8-8 INSTALLATION
OS 517-1	RINGING CONTROL, OVER-ALL SUPERVISION
OS 518-1	CHECK AND OPERATION OF HOLD MAGNETS
OS 519-1	FALSE CHARGE, GROUND TEST, CONTINUITY TEST
OS 520-1	GROUND TEST, RINGING CONTROL CHECK
OS 521-1	REGULAR RELEASE
OS 522-1	BUSY LINE, OVERFLOW
OS 523-1	INTERCEPT
OS 524-1	NO TEST CALL
OS 525-1	CROSS TEST LINK AND JUNCTOR HOLD MAGNETS
OS 526-1	MISCELLANEOUS CROSS DETECTION AND TTI SEIZURE
OS 527-1	P.B.X. BLOCK ALLOTTER, TERMINAL HUNT, END OF BLOCK HUNT
OS 528-1	CROSS CONNECTIONS & TESTING OF "X" NUMBERS

ISSUE
DATE

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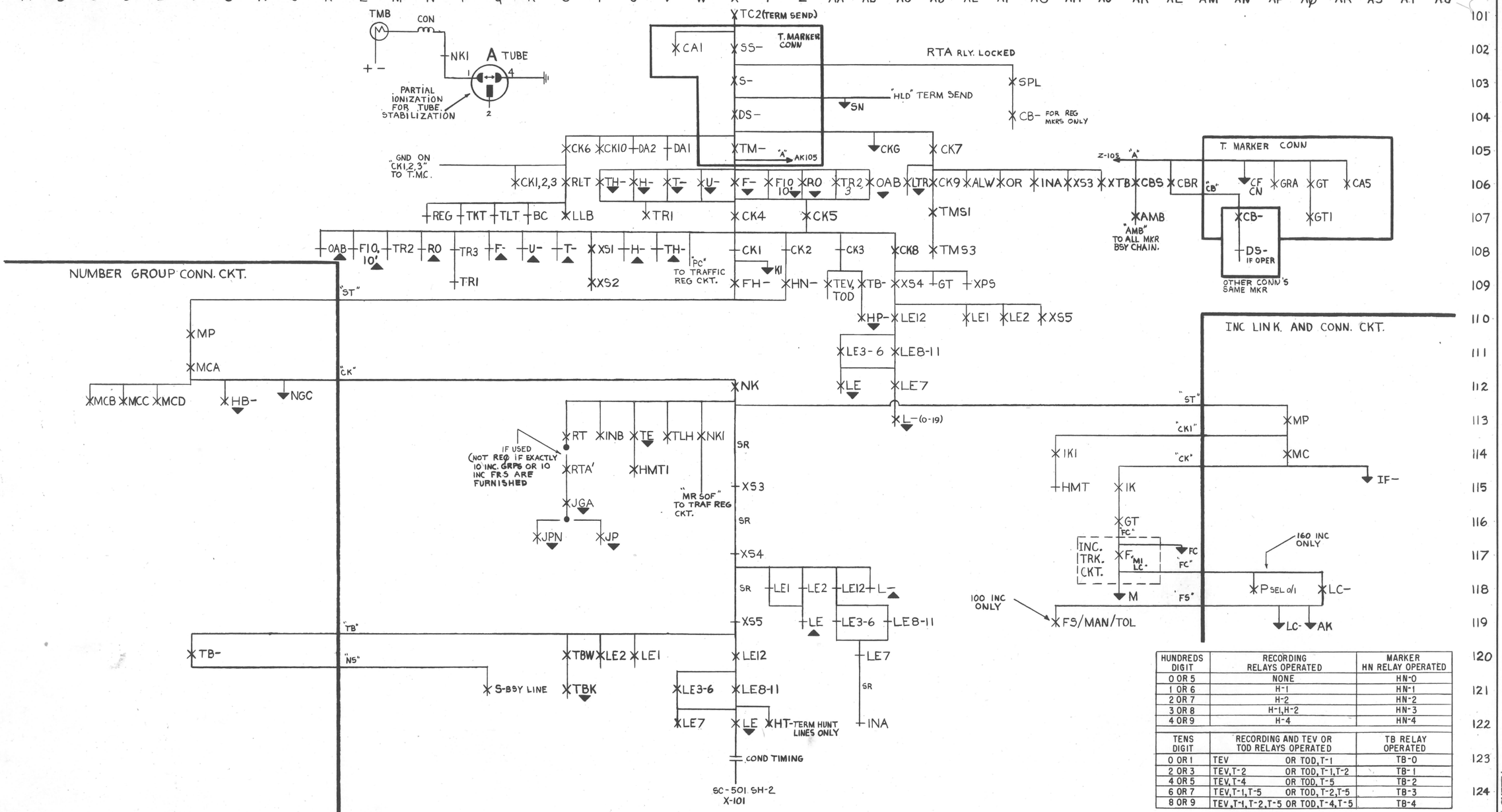

HUNDREDS DIGIT	RECORDING RELAYS OPERATED	MARKER HN RELAY OPERATED
0 OR 5	NONE	HN-0
1 OR 6	H-1	HN-1
2 OR 7	H-2	HN-2
3 OR 8	H-1, H-2	HN-3
4 OR 9	H-4	HN-4

TENS DIGIT	RECORDING AND TEV OR TOD RELAYS OPERATED	TB RELAY OPERATED
0 OR 1	TEV OR TOD, T-1	TB-0
2 OR 3	TEV, T-2 OR TOD, T-1, T-2	TB-1
4 OR 5	TEV, T-4 OR TOD, T-5	TB-2
6 OR 7	TEV, T-1, T-5 OR TOD, T-2, T-5	TB-3
8 OR 9	TEV, T-1, T-2, T-5 OR TOD, T-4, T-5	TB-4

DIRECTORY NUMBER RECORDED	RECORDING RELAYS OPERATED	FH RELAY OPERATED	DIRECTORY NUMBER RECORDED	RECORDING RELAYS OPERATED	FH RELAY OPERATED	CODED NUMBER RECORDED	RECORDING RELAYS OPERATED WITH EXB RELAY OPERATED	FH RELAY OPERATED
0000-0499	NONE	FH-0	5000-5499	TH-1, TH-4	FH-5	0000-0499	NONE	FH-0X
0500-0999	H-5, -5'	FH-0'	5500-5999	H-5, H-5', TH-1, TH-4	FH-5'	0500-0999	H-5, H-5'	FH-0'X
1000-1499	TH-1	FH-1	6000-6499	TH-2, TH-4	FH-6	1000-1499	TH-1	FH-1X
1500-1999	H-5, H-5', TH-1	FH-1'	6500-6999	H-5, H-5', TH-2, TH-4	FH-6'	1500-1999	H-5, H-5', TH-1	FH-1'X
2000-2499	TH-2	FH-2	7000-7499	TH-1, TH-2, TH-4	FH-7	2000-2499	TH-2	FH-2X
2500-2999	H-5, H-5', TH-2	FH-2'	7500-7999	H-5, H-5', TH-1, TH-2, TH-4	FH-7'			
3000-3499	TH-1, TH-2	FH-3	8000-8499	TH-8	FH-8			
3500-3999	H-5, H-5', TH-1, TH-2	FH-3'	8500-8999	H-5, H-5', TH-8	FH-8'			
4000-4499	TH-4	FH-4	9000-9499	TH-1, TH-8	FH-9			
4500-4999	H-5, H-5', TH-4	FH-4'	9500-9999	H-5, H-5', TH-1, TH-8	FH-9'			

TERM MKR CONN CKT	5D-25036-01
INC LINK & CONN CKT (100)	5D-25032-01
INC LINK & CONN CKT (160)	5D-25457-01
NUMBER GROUP CONN CKT	5D-25276-01
TERM. MARKER CKT	5D-25283-01

TERMINATING MARKER
OVERALL OPERATION

SC-501-1 3 SHEETS, SHEET 1 *1 CROSSBAR

ISSUE 1 CR.
DATE 2/15/57

38-Y-4216 3 SHEETS, SHEET 1

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38-Y-4216

3 SHEETS, SHEET 2

ISSUE	DATE	CR
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LINE CHOICE CONNECTOR

LINE LINK FRAME

NUMBER GROUP CONNECTOR

INCOMING LINK FRAME

SC 501-1 SH 1 X 126

TLT
L-
SG — SLEEVE GUARD FAILURE
HT
LE 2
LE1
LE12
LE
HT- — FOR TERM. HUNT LINES
LE3-6
LE8-11
TLT
LC-
LE7
LCF
CA/CB
LLGA-D
HCA/HCB
LIL/RIL
LLGE
AB- — SEC WINDING
JA/JB
LJ
LCA
JP
TF
RF
HF
HF1
ST
CK
HG
LL
TK LJ
MP
MCA
MCB
MCC
CR
CE
LJA-/LJB-
PC TR. REG.
LE LO
LA
LB
H
HG
LK
BA
LK1
LOG A-D
LGA-D
LOG
LL- — BUSY LINKS
EH or OH
TK
AB — PRI WINDING
TMS1
3R
TMS3
TMS2
OVA
COND. TIMING
TKT
CH-
TE
SM
COND. TIMING
HMT
HMT1
INA
RC
RC1
MPS PS
RC
MKO FS
MKO
FS — MAN TOL 160 TRK
MK1 — OTHER MKR.
TRUNK
RC
P SEL — 0-9 100 TRK, 2-9 160 TRK
S SEL EXT. FR.
FP
RS
S SEL — ONE PER SWITCH 0-9
P SEL — 100 TRK. FRAME
P SEL
S SEL
S HLD
LL
EH OH
EH OH
BC
BC1
GC
GC1
EH/OH
SL
SL1
BA
GJ
LorR
LJ
SL
P HOLD
S HOLD
S HOLD MATE
S HOLD EXT
S HOLD MATE EXT
ONE OR THE OTHER FOR INC GROUPS
SC 501-1 SH3 X-101

TERMINATING MARKER
OVERALL OPERATION

NO 1 CROSSBAR

SC 501-1

3 SHEETS, SHEET 2

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38-Y-4216
3 SHEETS, SHEET 3

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LINE CHOICE CONNECTOR
LINE LINK FRAME
NUMBER GROUP CONNECTOR
INCOMING LINK & CONNECTOR
TRUNK
LINE HLD
NS
SM
LE LO
CK
HG
SG OPENED
GLH
GLH1
ATUBE
CON3
CON
CON1
CON2
PC LEAD OPENED
CON
GT1
GT2
SMG
GT
FC
TLH
LLGE
MKO
MK1 OTHER MARKER
FP
RS
SSEL
SSEL EXT
PSEL
SSEL
SL
SL1
TLH
RL TERM. SDR.
RC1
LC
M
AB-
FS
TK
TKT
AK
SL RC
LR AK FS
F
LC
PSEL 0-9
PSEL 2-9
PSEL 0/1
100 TRK
160 TRK
DS(TMC)
SS-(TMC)
CA1(TMC)
SPL(TMC)
CB-(TMC)
S-(TMC)
SN
PHLD SHLD (TSL)
ON1 (TS)
CB- (TMC)
U-
T-
H-
TH
H5
H5'
FH 5-9
FH 1-9
TB-
TEV/TOD
HN-
RL
ST H-116
CK10
CK7
ST(ILC) AR115
DA1
DA2
CK6
TM(TMC)
CKG
CBR/S
CB- OTHER(TMC)
GRA (TMC)
CA5 (TMC)
GT(TMC)
GT1(TMC)
HG CC ST
HB K115
TBW
ST H116
TBK
FH-0
CK4
K1
RC
RLT
L-
CK5
INB
HB
TB
TH15
CK9
HP-
OVA
LTR
XALZ
S-
ST S115 AK115
MP
CE
CR
MP
MCA
NGC
MCB
MCC
AM118
JA/JB
LJA/LJB
H6
LA
LB
MCA
MCC
MCB
MCD
OR
CK B117
LLG
HG
RF
TF
HF
CA/CB
LC
LCF
LCA-
LLB
LOG-
LK
HCA/HCB
BC
HF1
AB-
LL-
LG-
BC
BC1
GC
GC1
GJ
JP-
NK
RT
CH-
GLH
NK1
CON
CON3
GLH1
TMS2
GLH
TLH
TMS3
XS1
XS2
AMB
HNO
CK8
TEV
TBO
K2,3
IK1
CK1
JR CK
RTA'
JGA
GT2
GT1
GT2
SMG
CON2
CON1
CON
HMT
IK
JA/JB
JA/JB B116
RIL/LIL
JPN
ST S114
MP
MC
IF
LJ
JA/JB

TERMINATING MARKER
OVERALL OPERATION

NO. 1 CROSSBAR
SC 501-1
3 SHEETS, SHEET 3

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38-Y-4259

ISSUE	DATE
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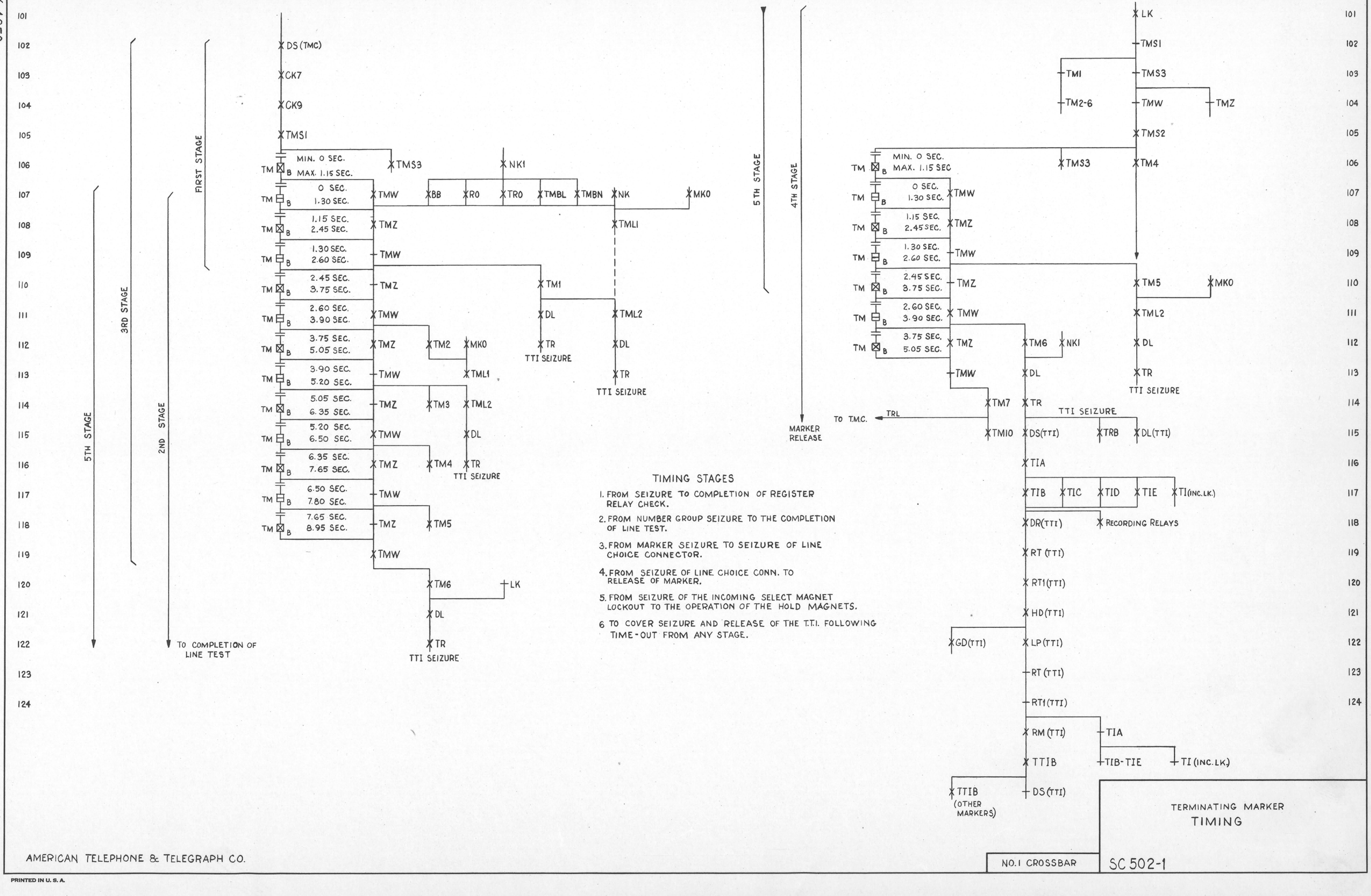

TIMING STAGES

1. FROM SEIZURE TO COMPLETION OF REGISTER RELAY CHECK.
2. FROM NUMBER GROUP SEIZURE TO THE COMPLETION OF LINE TEST.
3. FROM MARKER SEIZURE TO SEIZURE OF LINE CHOICE CONNECTOR.
4. FROM SEIZURE OF LINE CHOICE CONN. TO RELEASE OF MARKER.
5. FROM SEIZURE OF THE INCOMING SELECT MAGNET LOCKOUT TO THE OPERATION OF THE HOLD MAGNETS.
6. TO COVER SEIZURE AND RELEASE OF THE T.T.I. FOLLOWING TIME-OUT FROM ANY STAGE.

TERMINATING MARKER TIMING

NO. 1 CROSSBAR

SC 502-1

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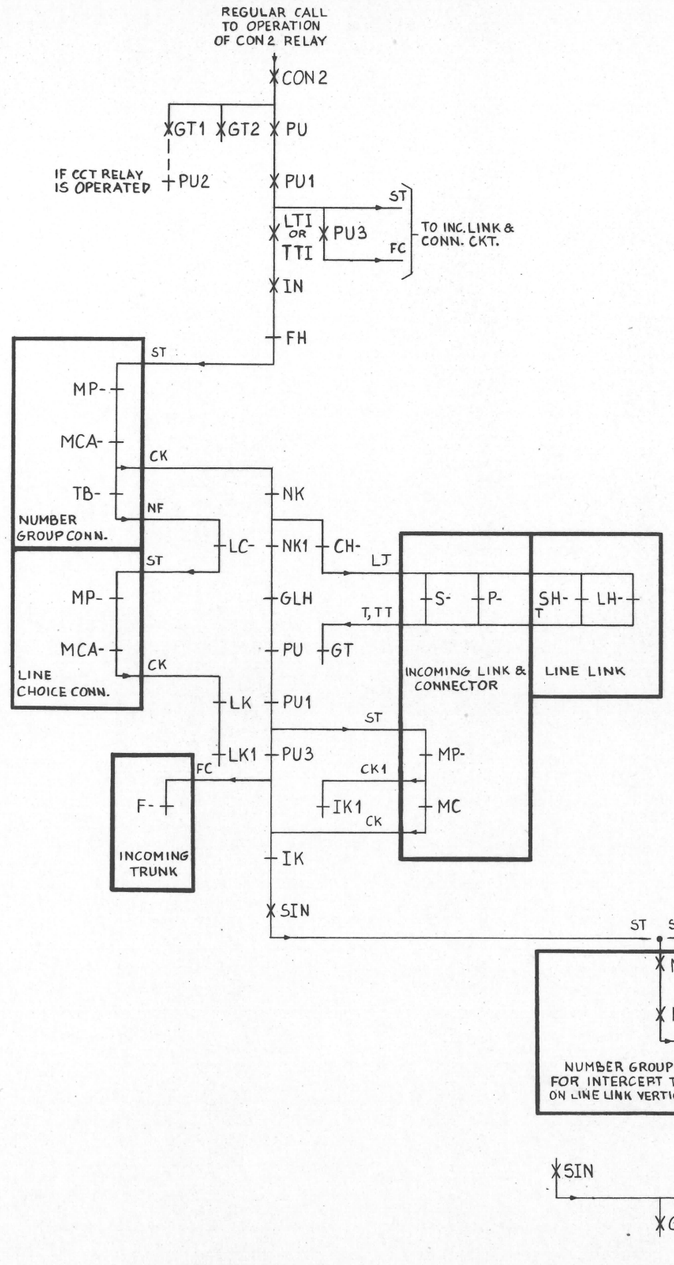
38-Y-4257

ISSUE	1	M8
DATE	3.1.54	

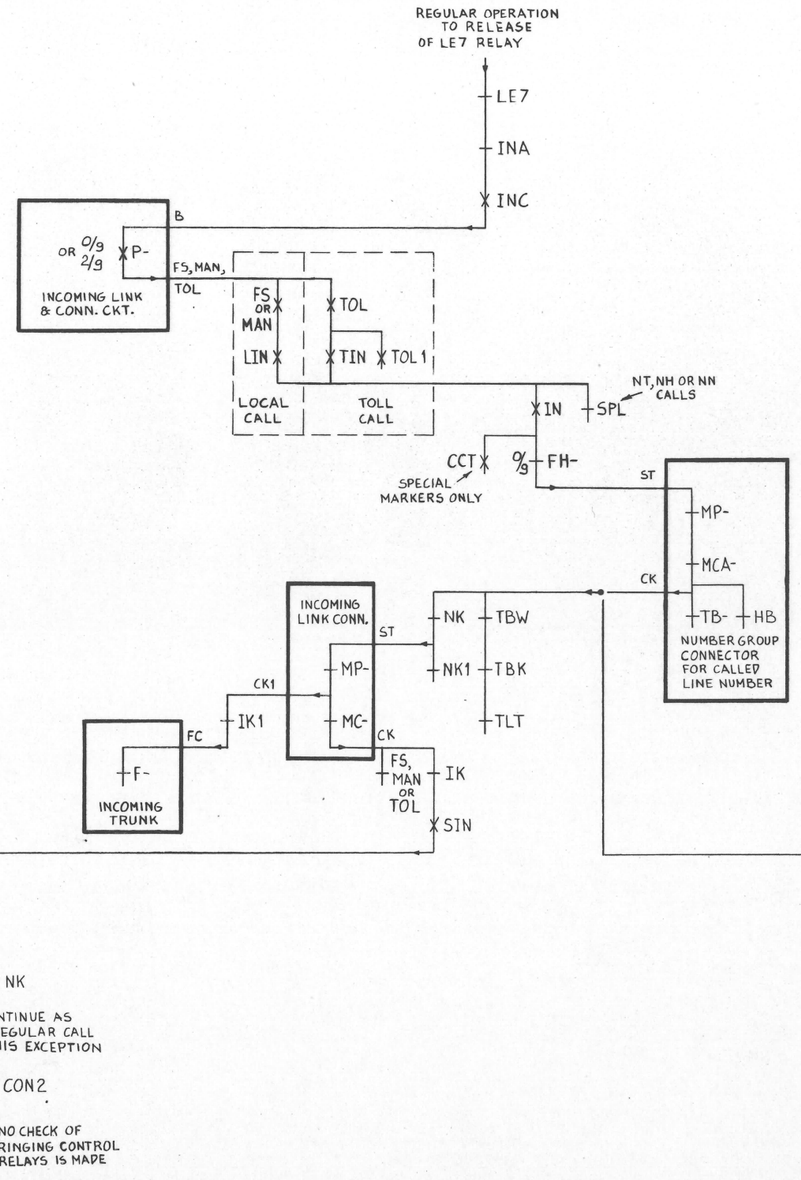
TROUBLE INTERCEPT

PLUGGED UP LINE, GROUND TIP SIDE, 115Ω BATTERY RING SIDE.

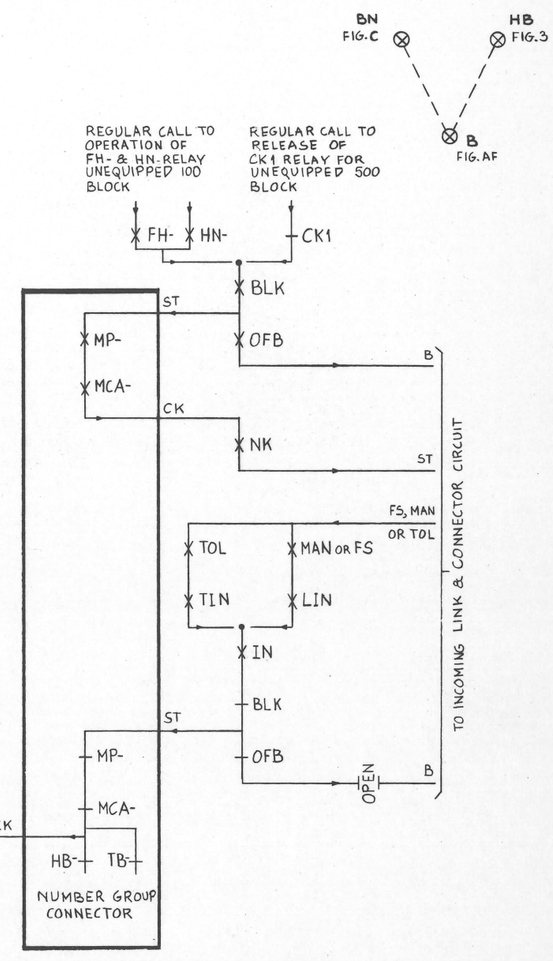


INDIVIDUAL LINES UNEQUIPPED, REGULAR INTERCEPT

NF & NC CROSS-CONNECTION REMOVED



UNEQUIPPED NUMBERS



TERMINATING MARKER CKT SD 25283-01 ISS. 47D

TERMINATING MARKER

INTERCEPT CALLS

NO. 1 CROSSBAR

SC 503-1

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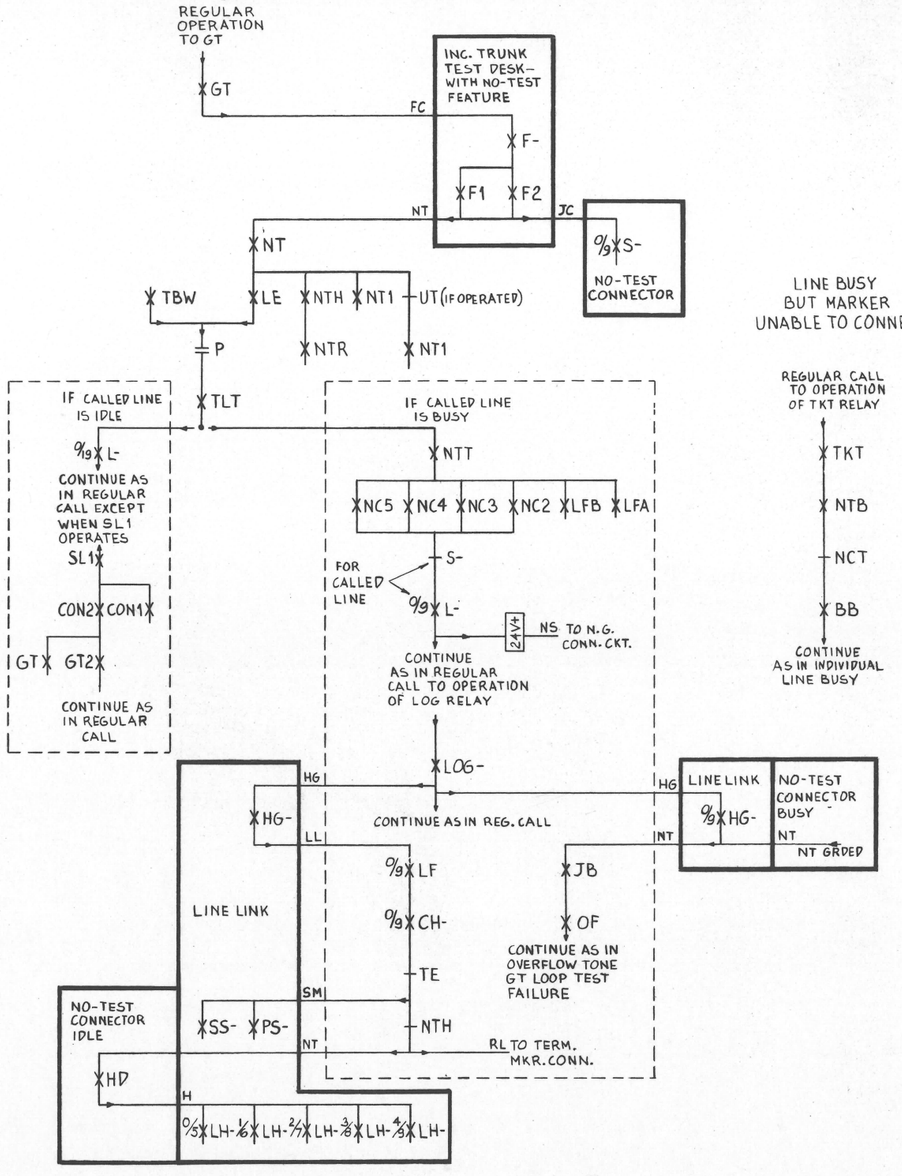
38-Y-4258

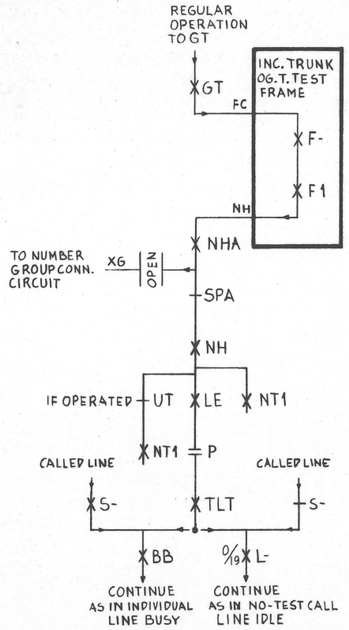
ISSUE	DATE
1	3-2-54
MB	

NO-TEST CALL
SPECIAL MARKER

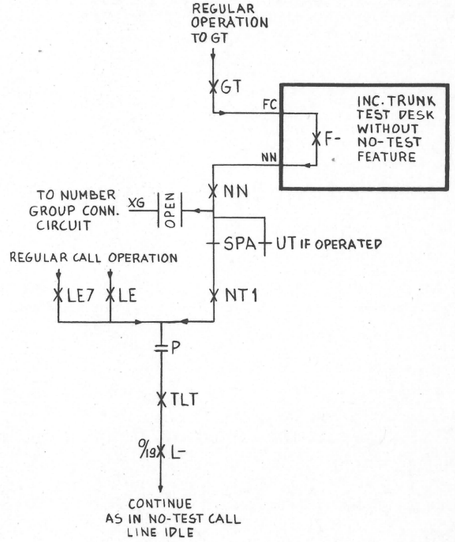


LINE BUSY BUT MARKER UNABLE TO CONNECT

NO-HUNT CALL
SPECIAL MARKER



TEST DESK CALLS
WHICH ARE NEITHER NO-TEST NOR NO-HUNT
SPECIAL MARKER



TERMINATING MARKER CKT. SD-25283-01 Iss. 47 D

TERMINATING MARKER

NO-TEST AND NO-HUNT CALLS

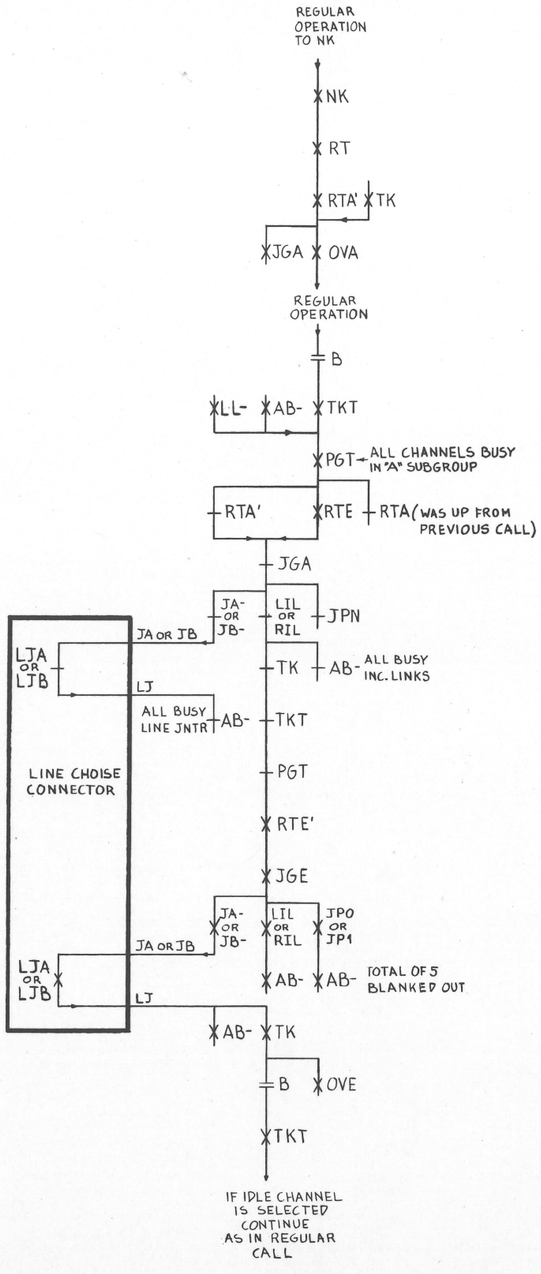
NO. 1 CROSSBAR

SC 504-1

38-Y-4261

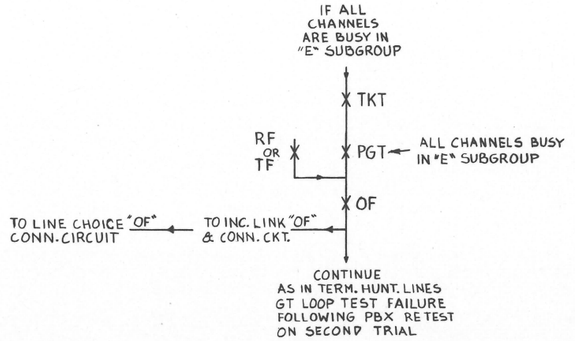
ISSUE	1	
DATE	3.3.54	

ALL CHANNELS BUSY IN "A" SUBGROUP

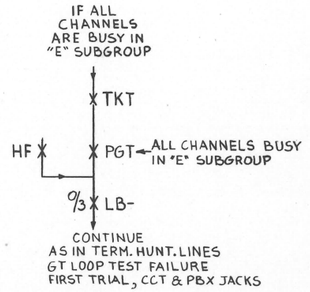


ALL CHANNELS BUSY IN "E" SUBGROUP

INDIVIDUAL OR PARTY LINE CALLED


IF ALL CHANNELS ARE BUSY IN "E" SUBGROUP
TKT
RF OR TF
PGT
ALL CHANNELS BUSY IN "E" SUBGROUP
OF
TO LINE CHOICE "OF" CONN. CIRCUIT
TO INC. LINK "OF" & CONN. CKT.
CONTINUE AS IN TERM. HUNT. LINES GT LOOP TEST FAILURE FOLLOWING PBX RETEST ON SECOND TRIAL

PBX TERMINAL HUNTING LINE CALLED
PBX RETEST


IF ALL CHANNELS ARE BUSY IN "E" SUBGROUP
TKT
HF
PGT
ALL CHANNELS BUSY IN "E" SUBGROUP
9/3
LB-
CONTINUE AS IN TERM. HUNT. LINES GT LOOP TEST FAILURE FIRST TRIAL, CCT & PBX JACKS

TERMINAT. MARKER CKT. SD-25283-01, 155 47D

TERMINATING MARKER

ALL CHANNELS BUSY CONDITIONS

NO. 1 CROSSBAR

SC 505-1

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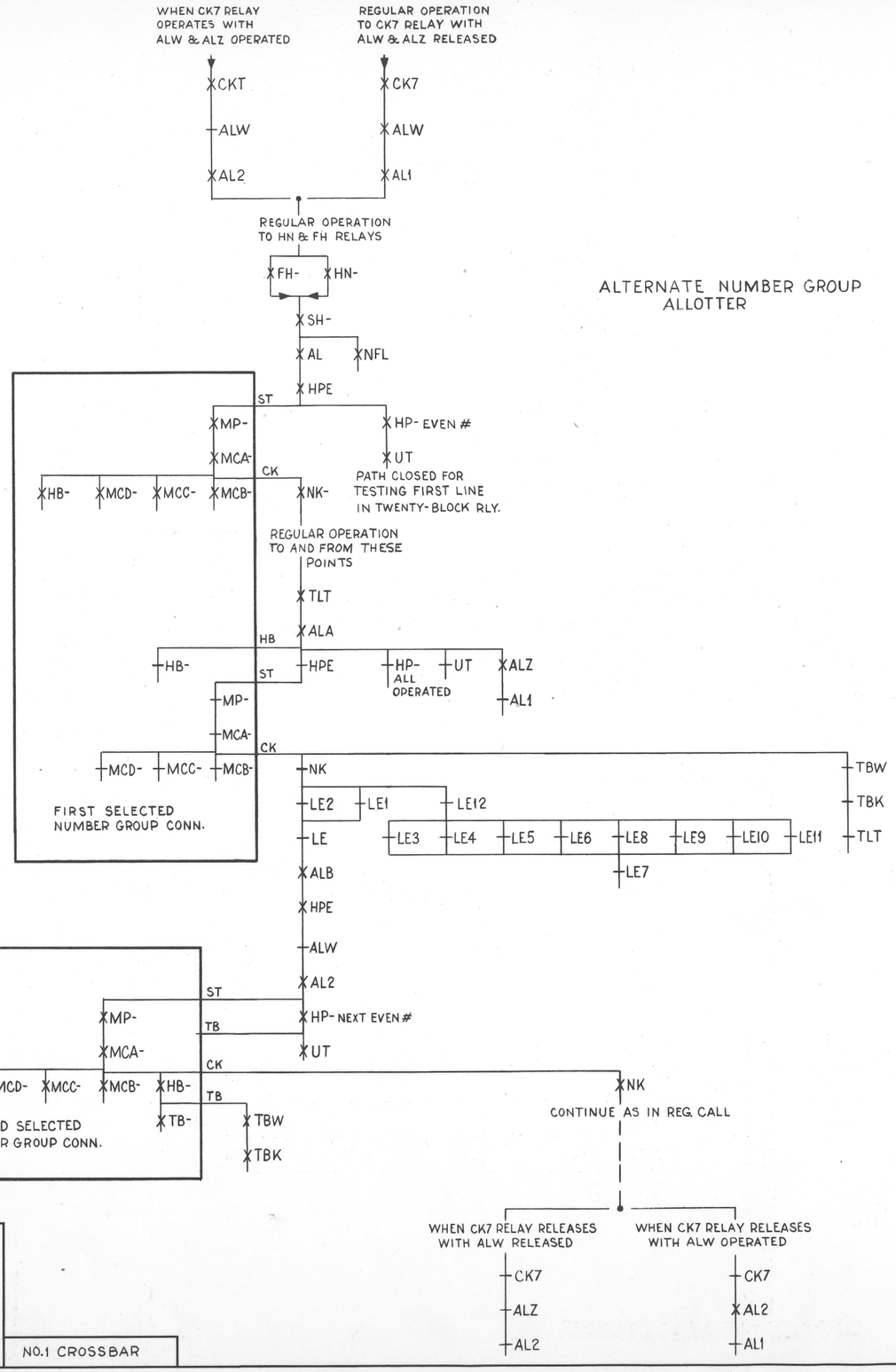
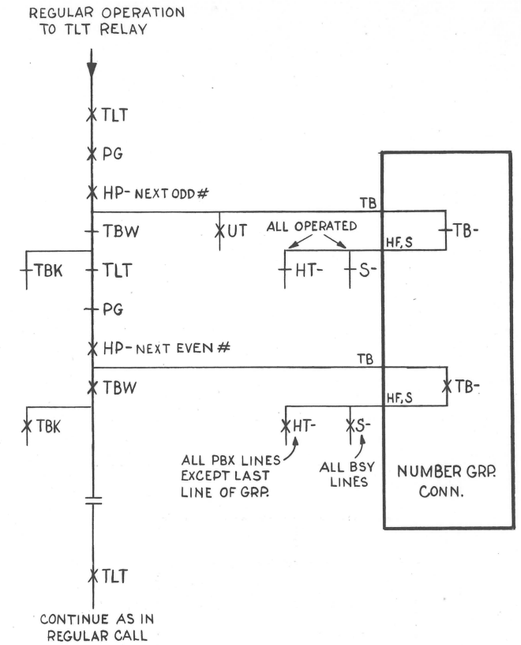


ALTERNATE NUMBER GROUP ALLOTTER



CONSECUTIVE END OF BLOCK HUNTING TERMINATING MARKER

TERMINATING MARKER
TERMINAL HUNTING LINES

SC 506-1

2 SHEETS, SHEET 1

NO.1 CROSSBAR

ISSUE	1	M.B.
DATE		3/5/54

2 SHEETS, SHEET 1

38-Y-4262

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38-Y-4262 2 SHEETS, SHEET 2

ISSUE	DATE
1	3/4/54
M8	

GT LOOP TEST
FIRST TRIAL

LC
HF
HF1
CN
CNL

REGULAR OPERATION
TO CHECK OF CHANNEL

SL1

REGULAR OPERATION
FOR LINE CONTINUITY TEST

CON2 — GT (PBX ROH)

GT1 — GT2

CNL

HF-4
DL
TR — TIS — TO TERM. TRBL. IND. CKT.
TIB
TTIB — TRL — TO TERM. MKR. CONN.

P- S- INCOMING LINK
LH- SH- LINE LINK

GT LOOP TEST
FIRST TRIAL

GT LOOP TEST FAILURE
SECOND TRIAL OR FIRST
WITH CCT & PBX JACKS

HF2
CH- GLH HTR GLH1 HF5
IF OPERATED
FC
F — INCOMING TRUNK
LLGE
TKT

P- S- INCOMING LINK
LH- SH- LINE LINK

SL
SL1
HF3
LB 0-3 — HF1
LBK
SG — LBK1 — S- TOTAL OF 4
SGA
INA
L-
S- FOR LINE FIRST SELECTED
SG
SGA
LE1 LE2 LE12
HT 0-19
LE3 LE4 LE5 LE6 LE8 LE9 LE10 LE11
LE LE7
INA

TO LINE CHOICE CONN. — CK
LK
RELEASE OF LINE
HF5

TLT

CONTINUE AS IN REGULAR CALL FOR PBX RETEST
AND IF NO R.O.H. IS ENCOUNTERED, MARKER COMPLETES.

GT LOOP TEST FAILURE
FOLLOWING PBX RETEST
ON SECOND TRIAL OVERFLOW
TONE

P- S- INCOMING LINK
LH SH- LINE LINK

CNL1
CNL2
OF
OR OFB TC
RC
TC1 TC — SETTING FOR OVERFLOW TONE — INCOMING TRUNK CKT.
YBA
YB L- ST — TO NUMBER GRP. CONN.
RV RC
RV RC RV1
SRL
TO MKR. CONN. CKT. — RL
CKG
CK10 CK7 CK6
MARKER RELEASES AS IN REGULAR CALL

NO.1 CROSSBAR

TERMINATING MARKER
TERMINAL HUNTING LINES

SC 506-1 2 SHEETS, SHEET 2

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LAST SENDER

INTERMEDIATE SENDER

FIRST SENDER

INC TRUNK

TO TRUNK

T. S. L.

TC1

TC2

SC2

ON2

RV5

SPL

SS

TR

TR1

CAI

CKG

CB3

CBS

GT

GT1

TM-(FIRST)

TM-(INT)

TM-(LAST)

TO TERM. SDR.

MISC. CKT. FOR TERM TBL IND FR.

BATT KEY

TERM. SDR.

RL

TERM. MKR.

TO OTHER S- RLYS SAME CONN.

TO OTHER TM- RLYS OTHER CONNS.

TO OTHER TM- RLYS SAME CONN.

TO TERM. MKRS.

OS 524-1

* TERM MARKER CONN. CKT. SD-25036-011 ISS. 25D
F.S. TERM SENDER CKT. SD-25013-011 ISS. 39D
INCOMING TRUNK CKT. SD-25295-011 ISS. 16D

TERMINATING MARKER CONNECTOR

SEIZURE SENDER PREFERENCE AND MARKER PREFERENCE

OS-501-1

2 SHEETS, SHEET 1

NO. 1 CROSSBAR

ISSUE	1	RKG
DATE	1/1/54	

2 SHEETS, SHEET 1

38-Y-4198

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38-Y-4198

2 SHEETS, SHEET 2

ISSUE	1	RNG
DATE	1/1/54	

RELAYS ASSOCIATED WITH F.T.M.

RELAYS ASSOCIATED WITH I.T.M.

RELAYS ASSOCIATED WITH L.T.M.

FIRST CONNECTOR

INTERMEDIATE CONNECTOR

LAST CONNECTOR

TO SHEET 1 — ST, L, CKG, CB3

DSO, TMO, DS-, TM-, DS5, TM5, CB, S-1750, P-850, TO CB JACK, TR, TRI, DA2, CK6, CK7, CBR, CBS, DA1, DB, OS 525-1

TO (SPL) RELAY CONTACTS IN MARKER CONN. IF MARKER IS NOT A SPECIAL MARKER

FIRST TERMINATING MARKER # 0

INTERMEDIATE TERMINATING MARKER

TO (SPL) RELAY CONTACTS IN MARKER CONN. IF MARKER IS NOT A SPECIAL MARKER.

LAST TERMINATING MARKER # 5

SEQUENCE CHART

TC1 (F.S.T. SEND.)

TC2 (F.S.T. SEND.)

SS-, CA1, S-, DS-, DA1, 2, TM-, CK6, 7, GT, CBR, S, GT1, CB

ALL CONN. EXCEPT ONE HANDLING CALL

MISC. CKT. TERM. TBL IND. FRAME

CB, CB-, A

ONE PER MARKER PER CONN.

TO MARKER CONN. CKT.

*TERM. MKR. CONN. SD25036-011 ISS. 25D
TERM. MKR. CONN. SD25283-011 ISS. 47D

TERMINATING MARKER CONNECTOR
SEIZURE, SENDER, PREFERENCE
AND MARKER PREFERENCE

NO. 1 CROSSBAR

OS 501-1

2 SHEETS, SHEET 2

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38-Y-413

ISSUE	DATE
1	11/1/54

F.S. TERM SDR | TERM MKR CONN

TO F.S. TERM SENDER CKT OS 518-1 SHEET 2

OAB — S- 40 — TM- 40 — "OA" — OAB C -48 350

RO — S- 16 — TM- 16 — "RO" — RO C -48 700

CK3 — S- 36 — TM- 36 — "CK3" — CK5 38 1 — CKG 5 6T D

CK6 — S- 37 — TM- 37 — "CK4"

TRI — TM- 17 — "TRI" — TR2 700 A -48 — TR3 700 A -48

CR2 — S- 35 — TM- 35 — "CK2" — CK5 37 1 2 — CKG 3 4T D

CK1 — S- 34 — TM- 34 — "CK1" — CK4 37 1 2 — CKG 7 8T D

CK8 C -48 700 — CK3 1 2B — CK5 6 7B D — K3

CK3 D -48 700 — CK5 D -48 P-300 S-700 — CK4 D -48 P-300 S-700

CK2 D -48 700 — CK2 1 2B — CK5 8 7T D — K2

CK1 D -48 700 — CK1 1 2B — CK4 5 4T — CKG 11 12T D — K1

CK6 D -48 950

CK7 D -48 950 — CK7 E 11 12T — XS2 3 2T — "CKG" — LTR L -48 700 — K

CK10 B -48 950

F1 7 8T — F2 8 7T — F4 8 7T — F5 2 1B — F10 8 7B — F10' 7 8B — OAB 2 1B — TH1 5 4T — TH8 4 5T — TH4 7 8T — TH2 8 7T — H1 4 5T — H2 1 2B — H4 5T 4 — H5' 1 2T — H5 10 9B — U5 4 5B — U4 7 8T — U2 7 8T — U1 7 8T — T1 7 8T — T2 4 5B — T4 4 5B — T5 4 5B — CK1 3 4B — CK2 3 4B — CK3 3 4B — RO 7 8T — CK5 8 7T — TR2 8 7T — CON1 2 1T — TR2 3 4B

RLT P 4 3T — LLB T -48 1200

RLT — CKG 10 9T D — "92" — RLT R -48 2500

TM1 A 4 5T — TMS1 3 4T — CK7 5 6T C -48 700 — CK9 4 6T E

XS1 48 — SR 1300 — CK5 4 5T

XS2 -48 — SR 830 — XS1 1 2T

XS4 -48 — SR 1500 — CK8 10 11T — XS3 1 2B

XS5 -48 — SR 2300 — XS4 7 6T

NK1 1 2T — NK 1 2T — 225 — XS3 -48

XS3 4 5B — XS5 4 3T

LEADS GROUNDED FOR CHECKING

CK1 — U1 U2 U4 U5 TH1 TH2

CK2 — T1 T2 T4 T5 TH4 TH8 TR2

CK3 — H1 H2 H4 H5 H5' RO OAB

CK4 — F1 F2 F4 F5 F10

TM-(T.M.C.)

DAI,2 — CKG — CKI0 — CK7

RLT — LLB — GROUNDS CKI,2,3,4 LEADS — ALL REGISTER RLYS NOT OPER ON CALL WILL NOW OPER

LTR — ALW — INA — CK9

REGISTER RLYS ALREADY OPER ON CALL

CK5 — CK4

XS1 — CK8 — CK3 — CK2 — CK1

PEG COUNT — X54

ALL REGISTER RLYS NOT OPER ON CALL RELEASE (IF NO FALSE GND ON ANY REG LEAD)

TERMINATING MARKER CKT SD-25283-011 ISS.47D
TERMINATING MARKER CONN CKT SD 25036-011 ISS.25D

TERMINATING MARKER

RECEIVING LEAD CONTINUITY TEST

NO.1 CROSSBAR

OS-502-1

AMERICAN TELEPHONE & TELEGRAPH CO.

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38-Y-4186

DATE	ISSUE
8/1/74	3

TERM MKR CONN.

S- DS- J' L K

CK7 950 D -48

CK6 950 D -48

XS3 -48 V 225 SB1 NK 2 1T NK1 2 1T XS2 2 3T CK7 12 11T E

XS5 3 4T XS3 5 4T

XS2 XS1 2 1T 830 V -48 SB1

XS1 -48 V 1500 SB1 CK5 4 5T D

T. T. I. MT 2 3T XNS XS5 5 6T XS4 11 10T

XS5 XS4 6 7T 2300 V -48 SB1

XS4 -48 V 225 CK8 10 11T XS3 1 2B V

N. G. C.

V LDF H

S19 2500 6T L19 5 4T LB3 8 9T MT6 MS19 9 10T MCB TB- 7 2 1T LBK 5

S10 2500 6T L10 5 4T LB2 2 3T MT6 NS10 1 2B 1 2 17 LBK

S9 2500 6 L9 5 4T LB1 2 3T MT5 NS9 9 10T 1 2 17 LBK

S0 2500 6 L0 5 4T LB0 2 3B MT5 NS0 1 2B 1 2 17 LBK

V LDF H

LE -48 300 LE11 11T 12 LE10 11T 12 LE9 11T 12 LE8 11T 12 LE2 11B 12 LE3 12B 11 LE6 8 7 LE6 5 4 LE6 2 1 LE6 4 3 LE6 2 1

HF19 05530 3T LC19 HF18 05530 6T LC18 HF17 05530 3T LC17 HF16 05530 6B LC16 HF15 05530 3B LC15

LE4 1 2 LE4 4 5 LE4 7 8 LE5 1 2 LE5 4 5 LE5 7 8 LE5 1 2 LE5 4 5 LE5 7 8

HF7 05530 3T LC7 HF6 05530 6T LC8 HF8 05530 9T LC9 HF9 05530 3B LC10 HF10 05530 6B LC11 HF11 05530 3T LC12 HF12 05530 6T LC13 HF13 05530 3B LC14 HF14 05530

LE4 5 4 LE4 2 1 LE3 7 8 LE3 4 5 LE3 1 2 LE3 4 5 LE3 1 T

HF6 05530 6B LC6 HF5 05530 3B LC5 HF4 05530 9T LC0 HF3 05530 6T LC1 HF2 05530 3T LC2 HF1 05530 6B LC3 HF0 05530 3B LC4

LE7 -48 S 1000 7 8B LE3 7 8B LE4 7 8B LE5 7 8B LE6 T

12 11B LE8 12 11B LE9 12 11B LE10 12 11B LE11 T

-48 -48 -48 -48 -48 -48 -48 -48

-48 AH 700 LE3 8 7T LE12 T

-48 AH 700 LE4 6 5T LE12 T

-48 AH 700 LE5 4 3T LE12 T

-48 AH 700 LE6 2 1T LE12 T

-48 AH 700 LE8 8 7B LE12 T

-48 AH 700 LE9 6 5B LE12 T

-48 AH 700 LE10 4 3B LE12 T

-48 AH 700 LE11 2 1B LE12 T

LE1 -48 AH 700

LE2 -48 AH 700

XT2 2 3T XF1 2 1T -48 AH 700 LE12 NK 6 5T XS4 9 6T L0 1 3 L9 1 3 L10 1 3 L19 1 3 CK8 2 1 3T XS5 2T 1 SGA 2B 1 INA 1 2T JHA 4T 3 NK 7 8T CK6 7 6B P

L0 2T -48 "LR0" L9 2T -48 "LR9" L10 2T -48 "LR10" L19 2T -48 "LR19"

TLT 64 AT 252 125 660 AB RLT P 2T + P-200 - S-2600

RLT -48 R 12 11B

200 A P 12.84 - 13.08 MF

2T 1 LE M 7 6B LK K 2T 1 TBW L

OR -48 N 640 OF 4 3B BB 4 3B CK7 3 4B

TERM MARKER CIRCUIT SD 25283-011 ISSUE 47 D

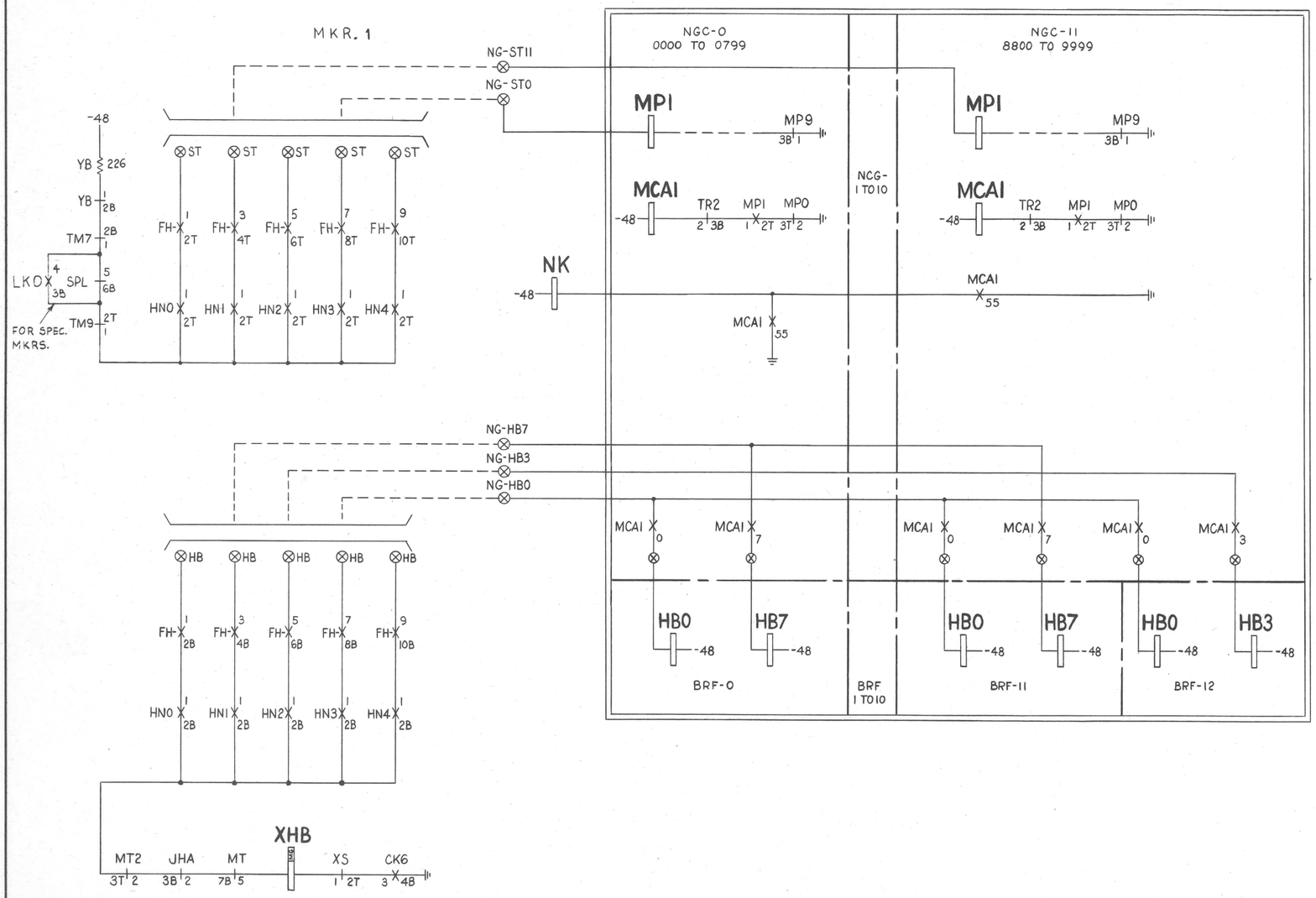
TERMINATING MARKER

OPER. OF LE-RELAYS TEST FOR FALSE GND. AND CROSS ON "NS" LEADS

NO. 1 CROSSBAR | OS 503-1

AMERICAN TELEPHONE & TELEGRAPH CO.

PRINTED IN U.S.A.



CROSS CONNECTIONS OF "ST" & "HB" PUNCHINGS
(800 NUMBERS PER NUMBER GROUP)

TEL. NO.	RELAY OPR. OFF A FH	RELAY OPR. OFF B FHB	RELAY OPR. HN	CROSS CONNECT FROM FH ST	CROSS CONNECT TO NG ST	CROSS CONNECT FROM FH HB	CROSS CONNECT TO NG HB
0000	0	0	0	0	0	0	0
0100			1	1		1	1
0200			2	2		2	2
0300	↓	↓	3	3	↓	3	3
0400	0	0	4	4		4	4
0500	0′	0′	0	0		0	5
0600			1	1		1	6
0700			2	2	↓	2	7
0800	↓	↓	3	3	1	3	0
0900	0′	0′	4	4		4	1
1000	1	1	0	0		0	2
1100			1	1		1	3
1200			2	2		2	4
1300	↓	↓	3	3	↓	3	5
1400	1	1	4	4		4	6
1500	1′	1′	0	0	↓	0	7
1600			1	1	2	1	0
1700			2	2		2	1
1800	↓	↓	3	3		3	2
1900	1′	1′	4	4		4	3
2000	2	2	0	0		0	4
2100			1	1		1	5
2200			2	2		2	6
2300	↓	↓	3	3	↓	3	7
2400	2	2	4	4	3	4	0
2500	2′	2′	0	0		0	1
2600			1	1		1	2
2700			2	2		2	3
2800	↓	↓	3	3	↓	3	4
2900	2′	2′	4	4		4	5
3000	3	3	0	0		0	6
3100			1	1	↓	1	7
3200			2	2	4	2	0
3300	↓	↓	3	3		3	1
3400	3	3	4	4		4	2
3500	3′	3′	0	0		0	3
3600			1	1		1	4
3700			2	2		2	5
3800	↓	↓	3	3	↓	3	6
3900	3′	3′	4	4		4	7
4000	4	4	0	0	5	0	0
4100			1	1		1	1
4200			2	2		2	2
4300	↓	↓	3	3	↓	3	3
4400	4	4	4	4		4	4
4500	4′	4′	0	0		0	5
4600			1	1		1	6
4700			2	2	↓	2	7
4800	↓	↓	3	3	6	3	0
4900	4′	4′	4	4		4	1

TEL. NO.	RELAY OPR. OFF A FH	RELAY OPR. OFF B FHB	RELAY OPR. HN	CROSS CONNECT FROM FH ST	CROSS CONNECT TO NG ST	CROSS CONNECT FROM FH HB	CROSS CONNECT TO NG HB
5000	5	5	0	0	6	0	2
5100			1	1		1	3
5200			2	2		2	4
5300	↓	↓	3	3		3	5
5400	5	5	4	4		4	6
5500	5′	5′	0	0	↓	0	7
5600			1	1	7	1	0
5700			2	2		2	1
5800	↓	↓	3	3		3	2
5900	5′	5′	4	4		4	3
6000	6	6	0	0		0	4
6100			1	1		1	5
6200			2	2		2	6
6300	↓	↓	3	3	↓	3	7
6400	6	6	4	4	8	4	0
6500	6′	6′	0	0		0	1
6600			1	1		1	2
6700			2	2		2	3
6800	↓	↓	3	3		3	4
6900	6′	6′	4	4		4	5
7000	7	7	0	0		0	6
7100			1	1	↓	1	7
7200			2	2	9	2	0
7300	↓	↓	3	3		3	1
7400	7	7	4	4		4	2
7500	7′	7′	0	0		0	3
7600			1	1		1	4
7700			2	2		2	5
7800	↓	↓	3	3		3	6
7900	7′	7′	4	4	↓	4	7
8000	8	8	0	0	10	0	0
8100			1	1		1	1
8200			2	2		2	2
8300	↓	↓	3	3		3	3
8400	8	8	4	4		4	4
8500	8′	8′	0	0		0	5
8600			1	1		1	6
8700			2	2	↓	2	7
8800	↓	↓	3	3	11	3	0
8900	8′	8′	4	4		4	1
9000	9	9	0	0		0	2
9100			1	1		1	3
9200			2	2		2	4
9300	↓	↓	3	3		3	5
9400	9	9	4	4		4	6
9500	9′	9′	0	0		0	7
9600			1	1		1	8
9700			2	2		2	9
9800	↓	↓	3	3	↓	3	10
9900	↓	↓	4	4	↓	4	11

ISSUE	1	RG
DATE		2/17/54

TERMINATING MARKER
TRANSLATION- SEIZURE OF NGC AND OPERATION OF HB- RELAY

OS 504-1

4 SHEETS, SHEET 1

NO. 1 CROSSBAR

4 SHEETS, SHEET 1

38-Y-4112

AMERICAN TELEPHONE & TELEGRAPH CO.

PRINTED IN U. S. A.

38-Y-4112

4 SHEETS, SHEET 2

ISSUE	DATE
1	4/66/57

TERMINATING MARKER FRAME

NUMBER GROUP CONNECTOR FR

BLOCK RELAY FRAME

LINE DISTRIBUTING FRAME

THOUSANDS REGISTER RELAYS

HUNDREDS REGISTER RELAYS

THRU H5 & H5' RELS.

TO OTHER HN RELS.

TO OTHER FH RELS

FH

HN

ST

HB

CROSS CONN. AS REQ.

1 PAIR OF PCHGS PER 100 NUMBERS

TO OTHER NUMBER GROUP CONNECTOR FRS.

MC

TO OTHER HB RELS.

CROSS CONN. AS REQ.

TB

TO OTHER TB RELS

THESE PUNCHINGS ARE NUMBERED TO AGREE WITH DIRECTORY NUMBERS

V

H

NS

NF

NC

CROSS CONN AS REQ.

LS

9999

TO SLEEVES OF LINE CKTS.

TENS REGISTER RELAYS

20 BLOCK RELS. 0-4

HUNTING PROGRESS RELAYS

EVEN TENS REL.

ODD TENS REL.

LINE TEST RELAYS 0-19

UNITS REGISTER RELAYS

LINE GROUP SELECTION RELAYS

HG 0-9 (A)

HG 0-9 (B)

HG 0-9 (C)

HG 0-9 (D)

HG 0-9 LLK A

HG 0-9 LLK B

HG 0-9 LLK C

HG 0-9 LLK D

CROSS CONN. AS REQ. FOR LINE LINK FR OF LINE CHOICE AND FOR L.LK. HORIZONTAL GROUP

LINE CHOICE AND RINGING CONTROL RELAYS

TF 0-19

RF 0-19

HF 0-19

CROSS CONN. AS REQ. FOR RINGING CONTROL, HUNTING LINES AND LINE CHOICE

ST

TO OTHER LINE CHOICE CONN. FRS

INC. LINK FRAME

TO SLEEVES OF INC. LINES

LC

LINE CHOICE CONNECTOR FRAME

LINE LINK FRAME

LO-LE (A)

LO-LE (D)

H 0-9 (A)

H 0-9 (D)

CC (A)

CC (D)

TO OTHER LINE LINK FRS. OF LINE CHOICE

LA & LB RELS.

TO OTHER HG RELS

HG

SM 0-9 (A)

SM 0-9 (D)

SELECT MAGNET CHOICE RELS.

TO PRIMARY SELECT MAGNETS

LINE JUNCTOR CONN. FR.

CC

TO OTHER CR RELS

CR

LL 0-9 (A)

LL 0-9 (D)

THRU OTHER CR RELS.

TO OTHER LINE LK. FRS. OF L.CH

CHANNEL TEST RELAYS

LJ

TO SLEEVES OF LINE LINKS

TO SLEEVES OF LINE JUNCTORS

LINE JUNCTOR HOLD MAGNET GROUP CHOICE RELAYS

EH

OH

HM

TO SECONDARY HOLD MAGNETS

TO OTHER INC. LK FRS

LINE JCTR GROUP CHOICE & SELECTION RELAYS

JA 0-9

JB 0-9

JA OR JB

TO OTHER LJ RELS

CROSS CONN. AS REQ.

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TERMINATING MARKER

TRANSLATION, SEIZURE OF NGC & OPERATION OF (HB) RELAY

NO. 1 CROSSBAR

OS 504-1

4 SHEETS, SHEET 2

OS DRAWN FOR OFFICE NOT EQUIPPED FOR EXTRA # SERIES.

NOTES

ST PCHG. TERMINALS 00-99 LOCATED ON "D" TERMINAL STRIP SHALL BE CROSS-CONN. TO NG-ST PCHG. 0-11 LOCATED ON "C" TERMINAL STRIP AS REQUIRED.

HB PCHG. TERMINALS 00-99 LOCATED ON "D" TERMINAL FOR SINGLE OFFICE AND AT "A" & "B" TERMINALS FOR MULTI-OFFICE SHALL BE CROSS-CONN. TO NG-HB PCHG. 0-24 LOCATED ON "C" TERMINAL STRIP AS REQUIRED.

TERMINATING MARKER

TRANSLATION-SEIZURE OF NGC AND OPERATION OF HB-RELAY

OS 504-1

4 SHEETS, SHEET 3

NO. 1 CROSSBAR

ISSUE 1 RHG
DATE 2/17/54

4 SHEETS, SHEET 3

38-Y-4112

AMERICAN TELEPHONE & TELEGRAPH CO.

PRINTED IN U. S. A.

38-Y-4112

4 SHEETS, SHEET 4

ISSUE	DATE
1	6/15/64

NGC-0
0000 TO 0799
OFFICE A

TO NGC'S
1 TO 10

NGC-11
8800 TO 9999
OFFICE A

NGC-0
0000 TO 0799
OFFICE B

TERM. STRIP C
NG-ST

TO NGC 11 (1ST MKR.)

TO NGC2 (1ST MKR.)

TO NGC1 (1ST MKR.)

OFFICE A

TO SHEET 3

OS 505

TRI

SEE NOTE 2

SEE NOTE 1

MP FIRST

MP INT.

MP LAST

FOR INT. MKR.

FOR LAST MKR.

AI OS 524

BI OS 524

THRU TR-RLY CONTS.

THRU TR-RELAY CONTS.

TO NG-ST PCHG. FOR OFF B SHEET 3

TERM. STRIP C
NG-HB

HB24

TO NG-HB PCHGS. FOR OFF. "B"

TO NGC'S FOR OFFICE B

HB-

MCA

MCB

MCC

MCD

CROSS-CONN. AS REQ'D.

TB TS. ON BLOCK RELAY FRAME

HB0 (0000)

HB7 (0700)

HB0 (8800)

HB7 (9599)

HB0 (9600)

HB3 (9900)

BR-0 (0000 TO 0799)

BR-1 TO BR-10 (0800 TO 8799)

BR-11 (8799 TO 9599)

BR-12 (9600 TO 9999)

BR-1 TO 12 (0800 TO 9999)

800 NUMBERS PER (N.G.C.)

TIA (TM)

MCA (NGC)

NGC

NOTES:
1. 1T OF TRI RELAY CONNECTS TO 1T OF E RELAY.
2. 7T OF TRI RELAY CONNECTS TO WINDING OF E RELAY.

NUMBER GROUP CONN. CKT. SD 25276-011 ISS. 19-D

TERMINATING MARKER
TRANSLATION - SEIZURE OF NGC
AND OPERATION OF HB-RELAY
INCL. PCHG. - HB, ST, NG-ST (A & B), NG-HB

NO. 1 CROSSBAR

OS 504-1

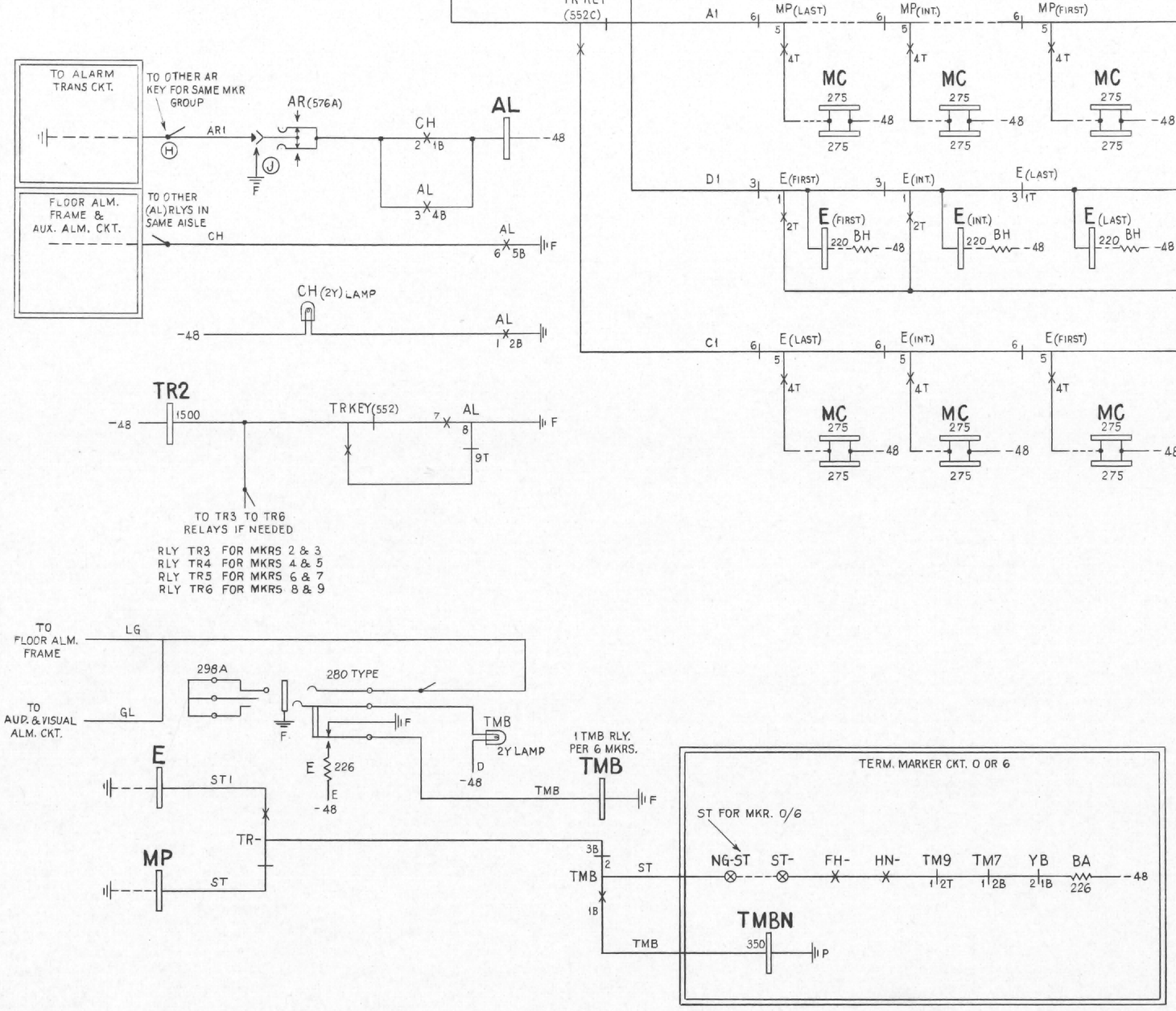
4 SHEETS, SHEET 4

AMERICAN TELEPHONE & TELEGRAPH CO.

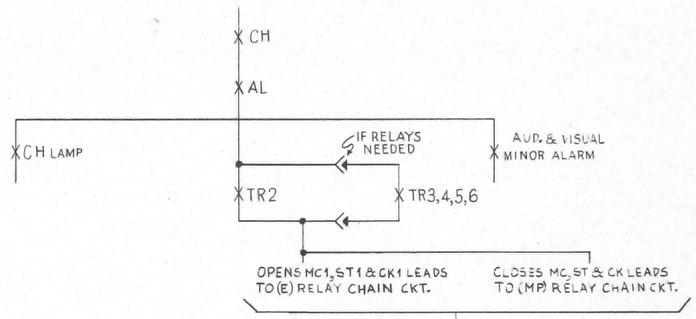
PRINTED IN U.S.A.

38-Y-4200

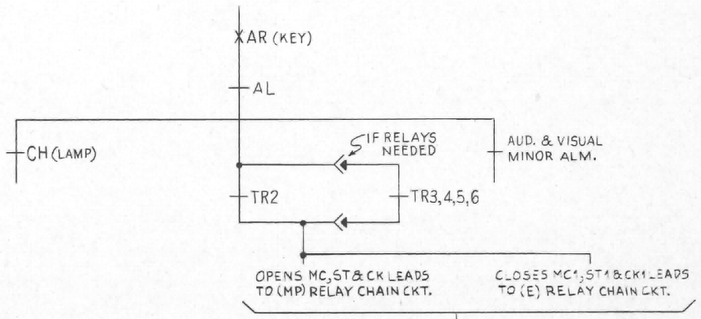
ISSUE	1
DATE	5/1/54



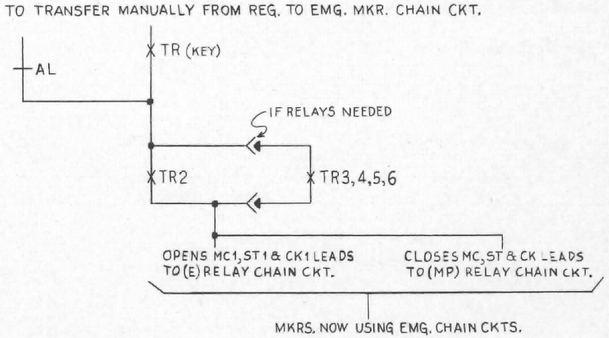
MKRS. USING REG. CHAIN CKT.


CH
AL
CH LAMP
IF RELAYS NEEDED
AUD. & VISUAL MINOR ALARM
TR2
TR3,4,5,6
OPENS MC1, ST1 & CK1 LEADS TO (E) RELAY CHAIN CKT.
CLOSES MC, ST & CK LEADS TO (MP) RELAY CHAIN CKT.
MKRS. NOW USING EMG. CHAIN CKTS.

TO RETIRE THE ABOVE ALARM & TRANSFER BACK TO REG. CHAIN CKT.


AR (KEY)
AL
CH (LAMP)
IF RELAYS NEEDED
AUD. & VISUAL MINOR ALM.
TR2
TR3,4,5,6
OPENS MC, ST & CK LEADS TO (MP) RELAY CHAIN CKT.
CLOSES MC1, ST1 & CK1 LEADS TO (E) RELAY CHAIN CKT.
MKRS. NOW USING EMG. CHAIN CKTS.

TO TRANSFER MANUALLY FROM REG. TO EMG. MKR. CHAIN CKT.


TR (KEY)
AL
IF RELAYS NEEDED
TR2
TR3,4,5,6
OPENS MC1, ST1 & CK1 LEADS TO (E) RELAY CHAIN CKT.
CLOSES MC, ST & CK LEADS TO (MP) RELAY CHAIN CKT.
MKRS. NOW USING EMG. CHAIN CKTS.

NOTES	
H	USE H IF ALM. TRANSFER CKT. IS PROVIDED.
J	USE J IF ALM. TRANSFER CKT. IS NOT PROVIDED.

NUMBER GROUP CONN. CKT. SD-25276-011 ISSUE 19 D

NUMBER GROUP CONNECTOR CKT.

CHECKING MARKER PREFERENCE CHAIN CKT. FOR OPENS & CROSSES

NO. 1 CROSSBAR OS 505-1

AMERICAN TELEPHONE & TELEGRAPH CO.

PRINTED IN U.S.A.

38-Y-4191

TERMINATING MARKER O

ISSUE	DATE	APPVD
1		

N.G.C. MCA 55 E — CK — 2 38 TMBL — 1 38 TMBN — NK 220 — BS 210 Y -48 — XTMB -48 — 1 2T — TR 8 7B — TE 3 4B — HMTI N 700 -48

NK — NKI L 700 -48 — J NK 9 10B

OS 519 (GLH) 3 RLY — LK 4 3B HMT 4 — 7

ACCESSIBLE FOR TST PICKS

TLH N 1500 -48 — SL 6 7T — NK 9 10B J

NK 10 9T — NKI 12 11T — AL 2 1T — ALB 8 9B — CONI 3 4B

N.G.C. — MCC 44 — TO OTHER N.G.C. — TO OTHER (MCC)RLY SAME N.G.C. — MCC 43

TRAFFIC REG. CKT. — MR — SOF

TE L -48 1000 — TE 3T — CH0 1 3T — CH- 1 3T — CH- 1 3T — CH9 1 3T — NK 3 4B J

CH0 700 — OS515 — CH4 700 — OS515 — CH5 700 — OS515 — CH9 700 — OS515

PGT 1 2B -48

BH X -48 226 — SDT 1 2B — NK 11 12T — MT4 5 6B — CK7 9 10B — X08 1 2B — F5 2 1 3T

F1 38 2 1 — F2 38 2 1 — F1 2 1 3T — F4 68 5 4 — F2 6 5B — F1 5 6B

F1 6 4 6T — F4 2 1 3T — STI — TO NUMBER CHECKING TRUNK CIRCUIT

F2 5 4 6T — F4 5 4 6T — F2 2 1 3T — F4 2 3B

ST1 ST2 ST3 ST4 ST5 ST6 ST7 ST8 ST9 ST10

TO CORRESPONDING INCOMING LINK CONN. CKTS.

NOTES	
1	1T TR2 RLY CONTACT CONNECTS TO 4T OF THE (E-)RLY.
2	7T TR2 RLY CONTACT CONNECT TO THE WINDING OF THE (E-) RLY.
3	4T TR2 RLY CONTACT CONNECTS TO 1B OF THE (E-)RLY

HMT — TE X 3 4T — M — IKI 6 7B — M 250 X

IKI L -48 4 5B — S-2600 — P-2600 — 8.56 TO 8.72 MF — IKI 9 10T J

GT — R — P-930 — GT2 1 3T — AJ 3200 — MT 8 9T — IK 6 5

BJ 500 X -48 — CKB 5 4B — S-600 — CKB 5 4T E — OS 520 — OS 520 — 7 — 7B

IKI L -48 700 — IK L -48 700

LTR 5 4B — CK7 11 12T E — NK 6 5B — CONI 8 7T — SL 2 1B — LTR L -48 700

CK7 11 12T E — XS2 2 3T

CK1 — CK

I.L.C. NO. 0

TR2 — NOTE 2 — 7 8 9T — 5T

MP(FIRST) A 5 4 6T — FOR INT. MKR. ST MC — MP (INT) 5 4 6T — FOR LAST MKR. ST MC — MP (LAST) 5 4 6T — OS 507 1 6T

MC- -48 275 MC 275 — FOR INT. (MP) — MC- -48 275 MC 275 — FOR LAST (MP)

MP(FIRST) 220 — MP(INT) 220 — MP(LAST) 220 — MP 1 3T "Z" OS 507 — MP 2 3T — B

MC- -48 275 MC 275 — TR2 2 — MC- — MC 3T — MCI — NOTE 1

TO SAME MKR. APPEARANCE IN OTHER INC. LINK & CONN. CKTS.

TR2 5 6 CK1 — MP(FIRST) 2 3B A — NOTE 3 CK1 4

CK1 1 TO INT. MKR. — 2 3B MP(INT)

CK1 1 TO LAST MKR. — 2B MP(LAST)

TO CK1 FOR SAME MKR. ON OTHER INC. LINK & CONN. CKTS.

I.L.C. NO. 9

TR2 8 9T STI NOTE 2 — 7

OS 507 1 6T — MP (LAST) 5 4 6T — FOR LAST MKR. MC — MP (INT) 5 4 6T — FOR INT MKR. MC — MP (FIRST) 5 4 6T A — NOTE 1 MCI — TR2 1 2 3T

MC- -48 275 MC 275 — FOR LAST (MP) — MC- -48 275 MC 275 — FOR INT. (MP)

MP(LAST) MP 1 3T 220 — MP(INT) MP 2 1 3T 220 — MP(FIRST) MP 2 1 3T 220 — OS 507 2

B — MC- 275 275 -48 — MC- 2 E

TI 12 11T — LC 50 — LC

CK1 — TO LAST MKR. — MP (LAST) 2B — CK1 — TO INT. MKR. — 3B MP(INT) — MP(FIRST) 3B 2 A

TR2 5 6T — 4 — CK1 NOTE 3

TO CK1 FOR SAME MKR. ON OTHER INC. LINK & CONN. CKTS.

INCOMING LINK & CONN. CKT. SD-25457-01 1SS.12D

* TERM. MKR. CKT. SD-25283-01 1SS.4.7D

TERMINATING MARKER
SEIZING INCOMING LINK AND CONNECTOR

NO. 1 CROSSBAR | OS 506-1

AMERICAN TELEPHONE & TELEGRAPH CO.

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38-Y-4199

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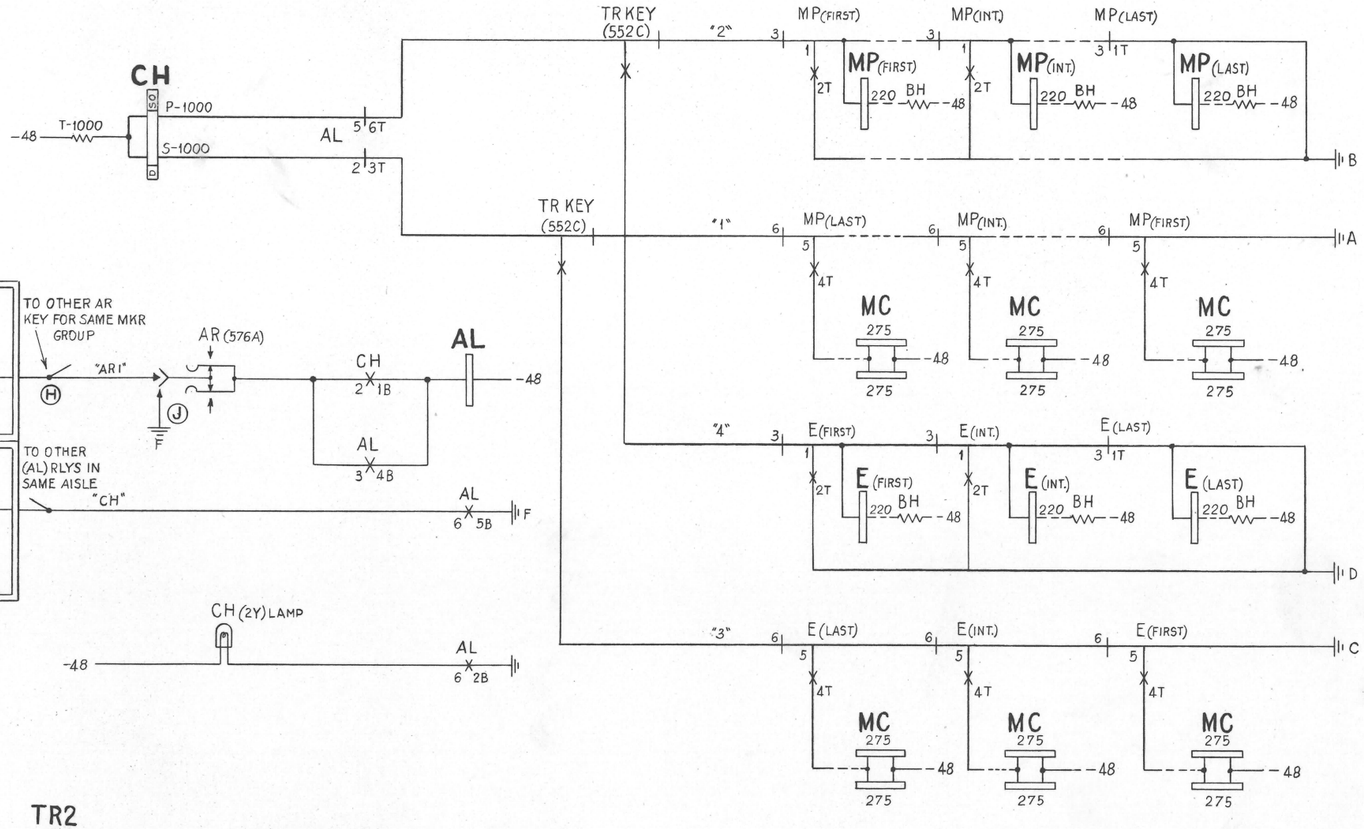
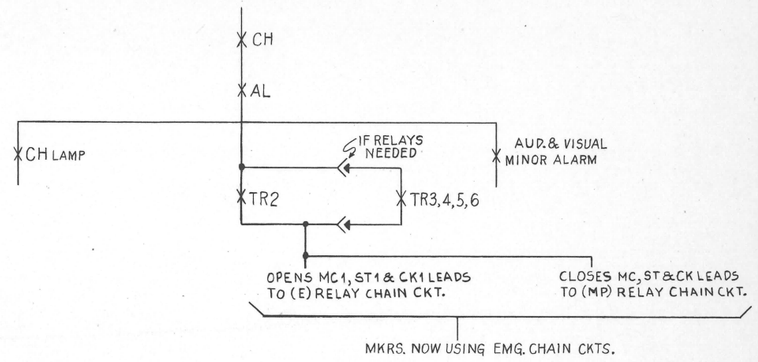
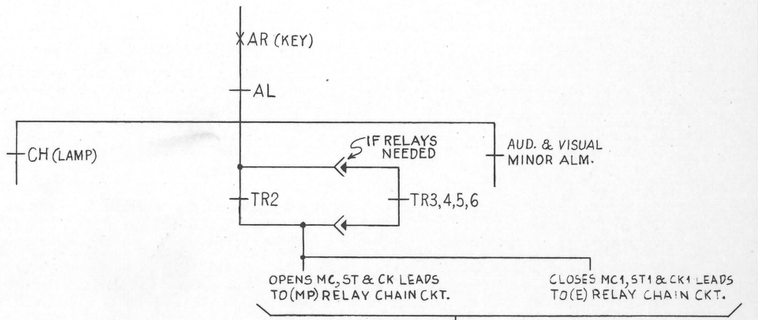


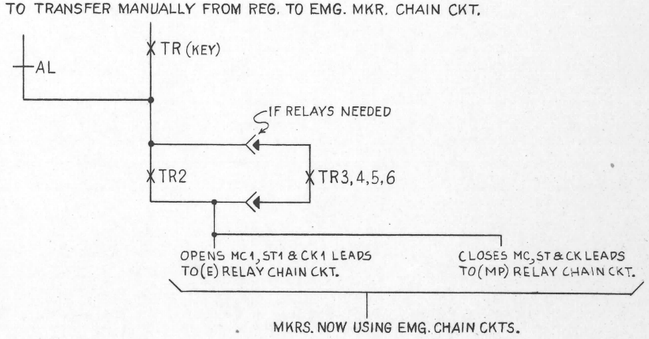
MKRS. USING REG. CHAIN CKT.


CH
AL
CH LAMP
IF RELAYS NEEDED
AUD. & VISUAL MINOR ALARM
TR2
TR3,4,5,6
OPENS MC1, ST1 & CK1 LEADS TO (E) RELAY CHAIN CKT.
CLOSES MC, ST & CK LEADS TO (MP) RELAY CHAIN CKT.
MKRS. NOW USING EMG. CHAIN CKTS.

TO RETIRE THE ABOVE ALARM & TRANSFER BACK TO REG CHAIN CKT.


AR (KEY)
AL
CH (LAMP)
IF RELAYS NEEDED
AUD. & VISUAL MINOR ALM.
TR2
TR3,4,5,6
OPENS MC, ST & CK LEADS TO (MP) RELAY CHAIN CKT.
CLOSES MC1, ST1 & CK1 LEADS TO (E) RELAY CHAIN CKT.
MKRS. NOW USING REG. CHAIN CKTS.

TO TRANSFER MANUALLY FROM REG. TO EMG. MKR. CHAIN CKT.


AL
TR (KEY)
IF RELAYS NEEDED
TR2
TR3,4,5,6
OPENS MC1, ST1 & CK1 LEADS TO (E) RELAY CHAIN CKT.
CLOSES MC, ST & CK LEADS TO (MP) RELAY CHAIN CKT.
MKRS. NOW USING EMG. CHAIN CKTS.

NOTES	
H	USE H IF ALM. TRANSFER CKT. IS PROVIDED.
J	USE J IF ALM. TRANSFER CKT. IS NOT PROVIDED.

INC. LINK & CONN. CKT. SD-25457-01 ISSUE 12D

INCOMING LINK & CONNECTOR CKT.

CHECKING MARKER PREFERENCE CHAIN CKT. FOR OPENS & CROSSES

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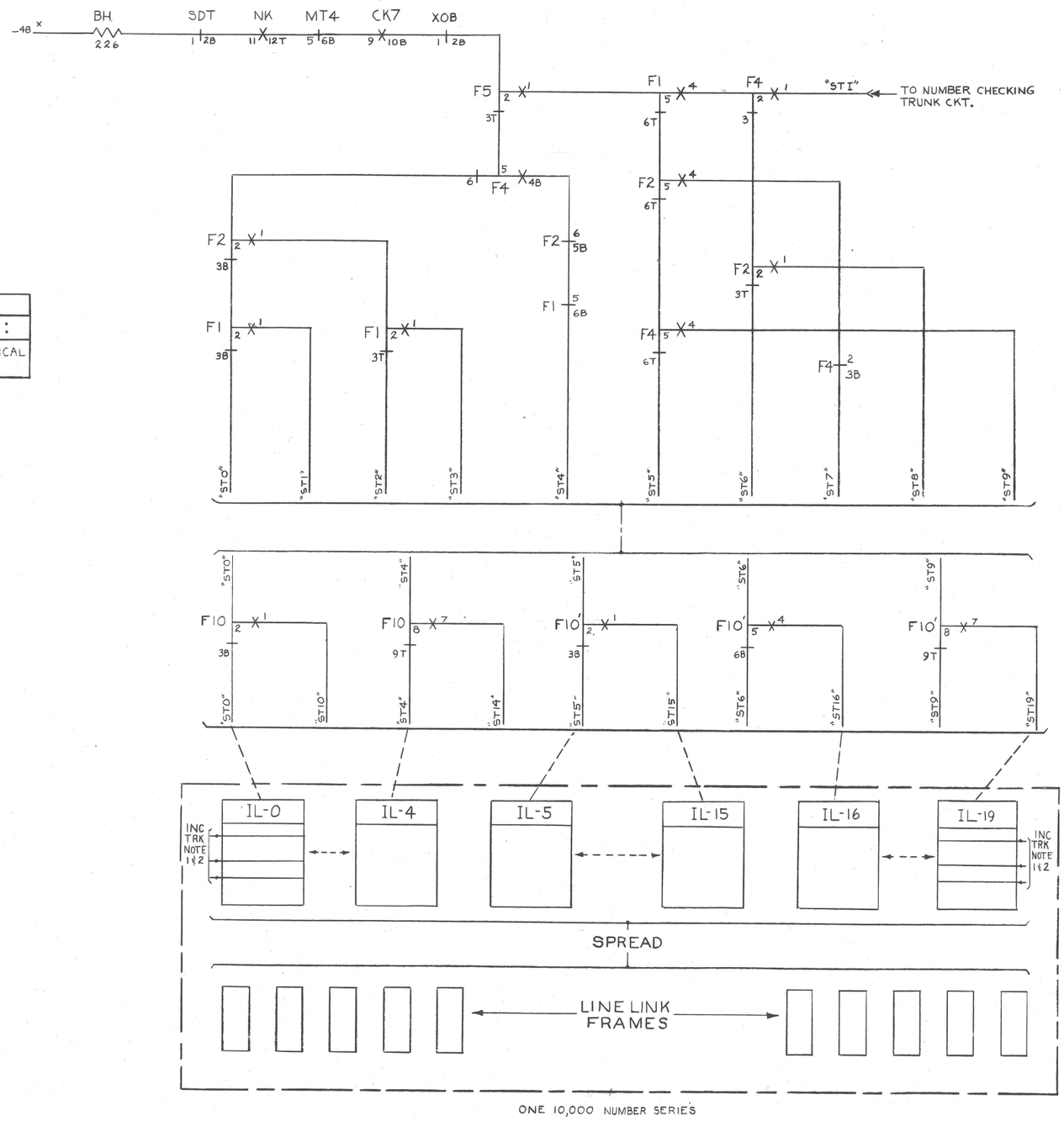

NOTE-1			
INCOMING TRUNKS SHOWN MAY BE:			
INDIVIDUAL TO	PHYSICAL OFC	IF C.O.	HAS NO THEORETICAL OFFICE

NOTE-2			
INCOMING TRUNKS SHOWN MAY BE:			
INDIVIDUAL TO	PHYSICAL & THEORETICAL OFC.	IF CENTRAL OFFICE	HAS A PHYSICAL & THEORETICAL OFC.
COMMON NON DISCRIMINATING TO			
INDIVIDUAL TO	PHYSICAL & THEORETICAL OFC.		HAS A PHYSICAL & THEORETICAL OFC.
COMMON NON DISCRIMINATING TO			
COMMON DISCRIMINATING TO			

TERMINATING MARKER

INCOMING LINK CONN START LEADS

OS 508-1

2 SHEETS, SHEET 1

NO. 1 CROSSBAR

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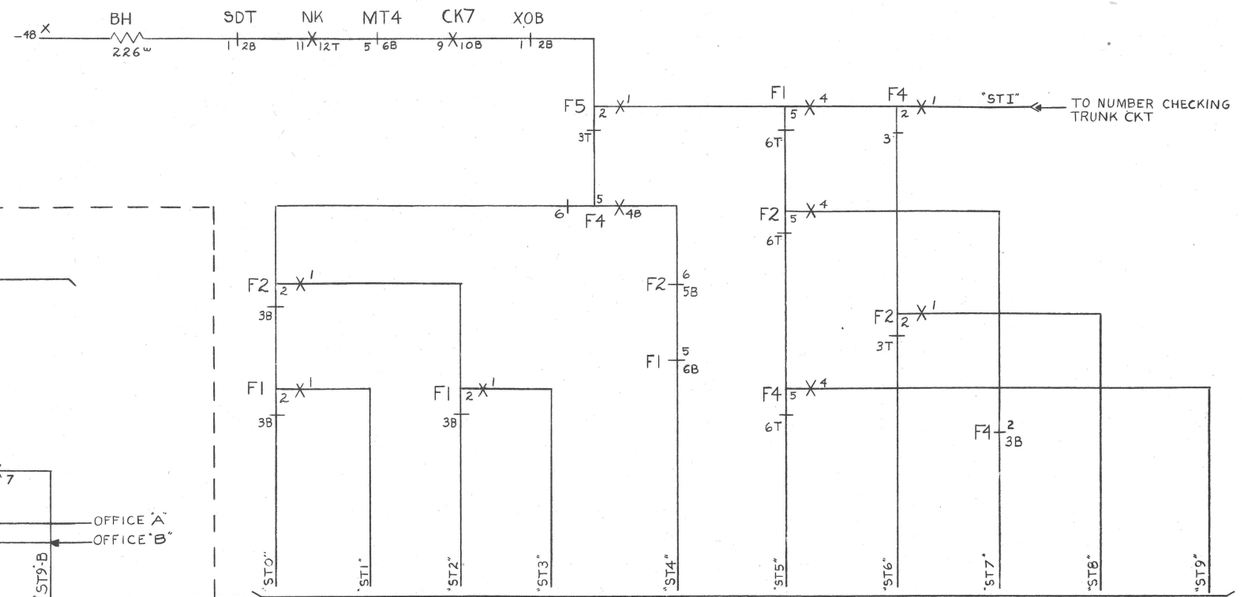
2 SHEETS, SHEET 1

36-Y-4131

ISSUE	1	R.G
DATE	2/11/54	



NOTE · 1			
INCOMING TRUNKS SHOWN MAY BE:			
INDIVIDUAL & COMMON TO	OFFICE A OFFICE B	IF CENTRAL OFFICE	HAS PHYSICAL OFFICES A & B ONLY
INDIVIDUAL TO	PHYSICAL OFFICE A & B THEO. OFC. A & B		HAS BOTH PHYSICAL & THEORETICAL OFFICES A & B
COMMON DISCRIMINATING TO	PHYSICAL OFFICE A & B. THEO. OFC. A & B		HAS BOTH PHYSICAL & THEORETICAL OFFICES A & B
COMMON NON-DISCRIMINATING TO	PHYSICAL OFC. A & B THEO. OFC. A & B		HAS BOTH PHYSICAL & THEORETICAL OFFICES A & B

NOTE · 2			
INDIVIDUAL TO	PHYSICAL OFFICE A & B	IF CENTRAL OFFICE	HAS PHYSICAL OFFICES A & B ONLY
INDIVIDUAL TO	PHYSICAL OFC. A & B THEO. OFC. A		HAS BOTH PHYSICAL & THEORETICAL OFFICE A AND PHYSICAL OFFICE B
COMMON DISCRIMINATING TO	PHYSICAL & THEO. OFC. A		
COMMON NON DISCRIMINATING	PHYSICAL & THEO. OFC. A		
INDIVIDUAL TO	PHYSICAL OFFICE A & B THEO. OFC. B.		HAS BOTH PHYSICAL & THEORETICAL OFFICE B AND PHYSICAL OFFICE A
COMMON DISCRIMINATING TO	PHYSICAL OFC. B & THEO. OFC. B.		
COMMON NON DISCRIMINATING	PHYSICAL OFC. B & THEO. OFC. B		
INDIVIDUAL TO	PHYSICAL OFC. A & B THEO. OFC. A & B		HAS BOTH PHYSICAL & THEORETICAL OFFICES A & B
COMMON DISCRIMINATING TO	PHYSICAL OFC. A THEO. OFC. A		
COMMON DISCRIMINATING TO	PHYSICAL OFC. B THEO. OFC B		
COMMON NON DISCRIMINATING TO	PHYSICAL OFC. A THEO. OFC A		
COMMON NON DISCRIMINATING TO	PHYSICAL OFC. B THEO. OFC B		

TERMINATING MARKER

INCOMING LINK CONN. START LEADS

OS 508-1 2 SHEETS, SHEET 2

NO. 1 CROSSBAR

38-Y-4135

ISSUE	DATE
1	2/17/54

TERMINATING SENDER LINK

SEC SW0

PRI SW2

SW1

SW0

B SDR.

B SDR.

TERM SEND

SPL

RVI ONI

SPL

ONI RVI

TO LEVEL 8

TO LEVEL 1

TRK GROUP 9 TRK·9

TRK·0

TRK GROUP 6 TRK·9

TRK·0

TRK GROUP 2 TRK·9

TRK·8

TRK·1

TRK·0

TO SEL 1

TO SEL 6

TO SEL 0

TO SEL 2

TO PRI SW 9

TO PRI SW 6

PRI. SW. 2

PS9

PS8

PS7

PS6

PS5

PS4

PS3

PS2

PS1

PS0

TO GRP 2 ON AUX INC. FR.

TO TRKS 14 & 15

TO TRKS 12 & 13

TO TRKS 10 & 11

TO GRP 2 ON REG. INC. FR.

TO TRKS 6 & 7

TO TRKS 4 & 5

TO TRKS 2 & 3

INCOMING LINK.

TI

M6

M2

M1

M0

TO SW0

TO LC2

TO LC6

LC0

LC9

LC 1 TO 8

ONE LC RLY PER SW.

TO ALL EVEN NUMBERED TRKS IN SAME GRP.

TO ALL ODD NUMBERED TRKS. IN SAME GRP.

(FIRST)

(INT)

(LAST)

OTHER MKR'S

TERMINATING MARKER CONN.

XFC

TTI LTI PU1 PU3 HF2

PU3

IK1 HF5

LCT

MTI

CNL1 GLH1 PU2 CCT

IK1

GT RO SDT

FC

XPS1

XPS CK7

INCOMING LINK CONNECTOR CKT.

OS-506

IK

IK1

XPS

CK8 XPS5 BC CK8

LK

TERMINATING MARKER

TERM MKR CKT SD-25283-01 ISS. 47D
TERM MKR CONN CKT SD-25036-01 ISS. 25D
TERM SDR LINK SD-25459-01 ISS 26D
INC LINK & CONN CKT SD-25157-01 ISS. 12D
NUMBER GRP CONN CKT SD-25276-01 ISS. 20D

TERMINATING MARKER
OPERATION OF TRUNK(F) RELAY AND INC. PRI SEL MAG

AMERICAN TELEPHONE & TELEGRAPH CO.

NO. 1 CROSSBAR

OS 509-1

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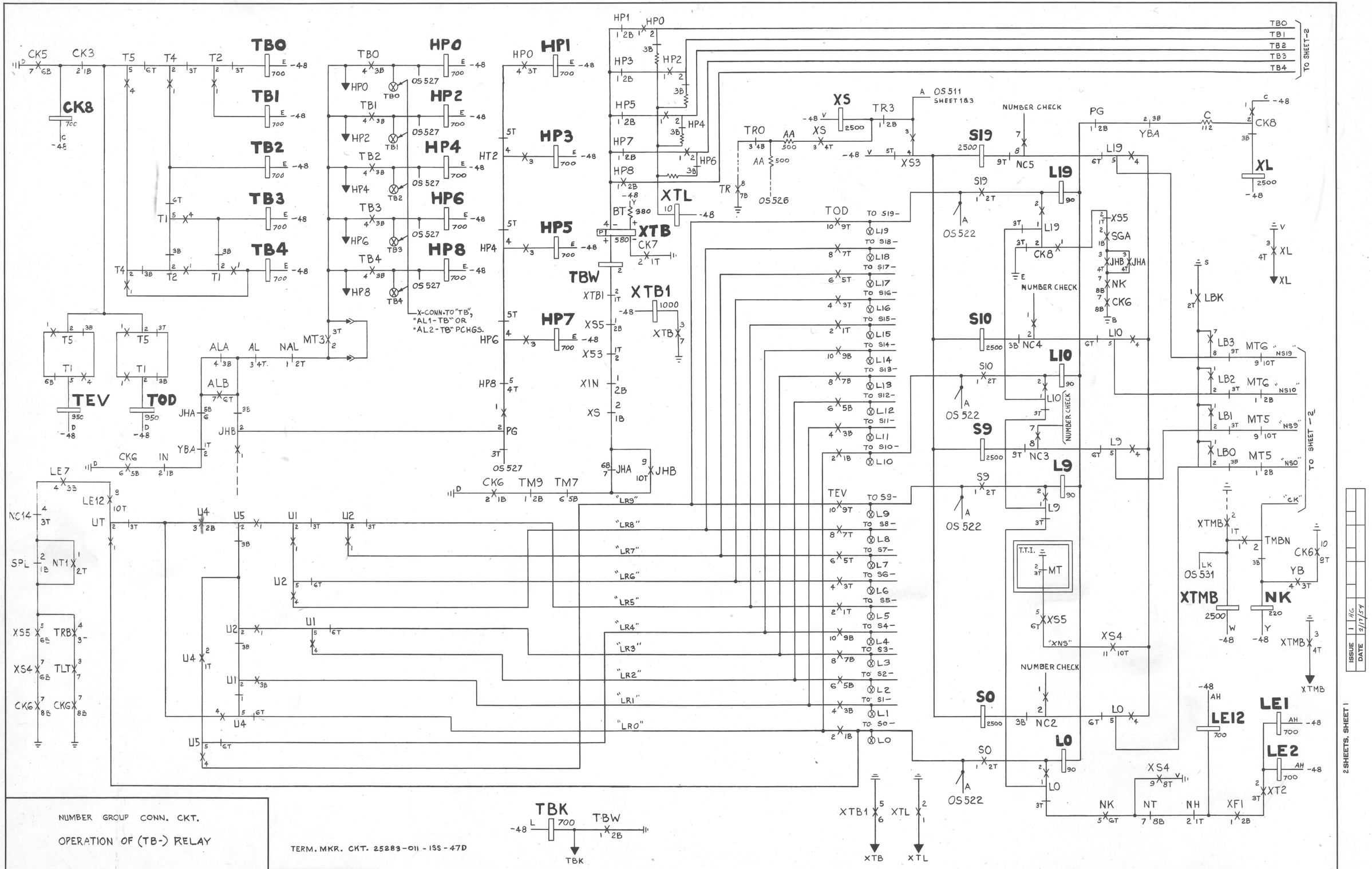

NUMBER GROUP CONN. CKT.

OPERATION OF (TB-) RELAY

OS 510-1 2 SHEETS, SHEET 1

TERM. MKR. CKT. 25283-011-ISS-47D

NO. 1 CROSSBAR

AMERICAN TELEPHONE & TELEGRAPH CO.

PRINTED IN U. S. A.

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1	2/17/54

38-Y-4166

2 SHEETS, SHEET 2

ISSUE	DATE
1	2/11/54

NUMBER GROUP -0

TENS DIGIT REGISTERED IN MARKER	(TB-) RELAY OPERATED IN MARKER
0 OR 1	TB0
2 OR 3	TB1
4 OR 5	TB2
6 OR 7	TB3
8 OR 9	TB4

(TB-) RELAY OPERATED IN MARKER	(HP-) RELAY OPERATED IN MARKER	(TB-) RELAY OPERATED IN A BLOCK RLY FR
TB0	HP0	TB0
TB1	HP2	TB1
TB2	HP4	TB2
TB3	HP6	TB3
TB4	HP8	TB4

TO SHEET 1 — TB0, TB1, TB2, TB3, TB4

NGF — MISC. T. T. I. — -48 — "NGF"

TO MCA RELAYS SAME NGC

"NGC" — TO OTHER NGC

TIA — 56 — TERM MKR.

MCA 29 28 27 26 25 51 52 — NGC-

TO HB1 TO HB6 RELAYS.

TO SHEET 1 — NS 19, NS 10, NS 9, NS 0, CK

MCA 55

MCB 20 29 30 39

BLOCK RELAY -0

HB0 1 2B 3 4B 5 6B 1 2T 3 4T

HB7 1 2B 3 4B 5 6B 1 2T 3 4T — TB0 TB1 TB2 TB3

TB0 TB1 TB2 TB3 TB4 — 120 — B -48

TO OTHER (TB-) RELAYS

VERT. (TEL.NO.) — L.D.F. — HOR. (C.S.V.)

NS0000 0019 — NS0020 0039 — NS0040 0059 — NS0060 0079 — NS0080 0099 — NS0780 0799 — LS

(TEL.NO.) VERT. — L.D.F. — (C.S.V.) HOR

TOTAL 100 SUBSCRIBER TERMINATIONS

"S" LEADS TO LINE HOLD MAGNETS ON LINE LINK FRAMES

LINE LINK FRAMES

* TERM MKR. CKT. SD-25283-011-ISS 47D
NUMBER GROUP CONN CKT SD-25276-011-ISS 19D

NUMBER GROUP CONN CKT.

OPERATION OF (TB-) RELAY

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NO. 1 CROSSBAR

OS-510-1

2 SHEETS, SHEET 2

TERMINATING MARKER

N.G.C. BR.

NF19
NF9
NF10
NF0
HF9
HF0
TF9
TF0
RF9
RF0

NCT
-48 AJ SR 225
NC14 2 IT
NTB 2 IT
NN 3 4T
NHA 2 IT
XG
7 SPL 88

MCB TBO
59 59
49 49
SEE NOTE BELOW
MCC

XGA 700 K -48
XG1,2,3 XGA 400 K -48

TO TB1
TO TB4
9 19 29 39 49
5 15 25 35 45
TO
89 99
85 95
NF TEL NO.

LC9
4 3T
2 1T
S400
P370
T400
2 1B
LCF9
3 4B
LCB TO LC1

LE4 9 8 7T
TO LC5 3 2 "HF5"
THRU LE-RLYS
TO LC4 9 8 "HF4"
LE3 7B
3 2 LE3 1T

LE10 10 9T
TO LC5 2 1T "TF5"
TO LC4 10 9B "TF4"
2 1B

LE 8 10 9T
TO LC5 2 1T RF5
TO LC4 10 9B "RF4"
2 1B

LC0
4 3T
2 1T
S400
P370
T400
2 1B
LCF0
3 4B

XS
-48 V
A OS 510 2500
TR3 1 2T
OS 525 XT2 1 2 3B -48

HT19 1500 LE2 12 11T 5 L19 4 3B
HT10 1500 LE2 2 1B 5 L10 4 3B
HT9 1500 LE1 12 11T 5 L9 4 3B
HT0 1500 LE1 2 1B 5 LO 4 3B

RF 4 5B RF
HF 4 5B HF
OS 520
TF 4 5B TF

RF -48 S 700
HF -48 S 700
TF -48 S 700

TO OFT "A" RELAY OS 522

-48 AJ
XF2 MG .3
S125 P45
XF MG
XF1 8Ω 2T XF1

XG2 4 5 6T
XGA 1 2 3T

TO XG-RLY
XF
HF
TF
RF
TO LC1-8

TO OTHER NGC FRAMES FOR SAME MKR.

MULT TO OTHER GRPS OF 100 NO.'S IN NGC AS REQ'D.

TO MC RLY'S FOR OTHER MKRS.

NOTE:
MULT TO MCD RLYS FOR OTHER MKR'S & TO OTHER TB- RLYS IN SAME N.G.

MCB TBO
40 40
50 50

4 14 24 34 44
0 10 20 30 40
TO
84 94
80 90
NF TEL NO.
TO TB1
TO TB4

ISSUE 1 RHG
DATE 2/17/59

5 SHEETS, SHEET 1

TERMINATING MARKER
NF AND NC CROSS CONN
10 - 10

OS 511-1

5 SHEETS, SHEET 1

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38-Y-4214 5 SHEETS, SHEET 2

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DATE	2/17/54				

TERMINATING MARKER

TBO MCD
19 59
9 49
'NC19'
'NC9'
SEE NOTE BELOW
TO OTHER N.G.C FOR SAME MKR

NC (TEL NO.)
9 19 29 39 49 ... 89 99
5 15 25 35 45 ... 85 89
TO

NUMBER GROUP CONN. BR

MCD 39 — HG D — TO CB1-B — TO MC RLYS FOR OTHER MKRS
MCD 29 — HG C — TO CB1-B
MCD 19 — HG B — TO CA1-B
MCD 9 — HG A — TO CA1-B
9 ... 0
30 20 10 0

CB9: 1 2T; HGD9, HGC9; 1100, 1100; 1 2B — TO RLYS CB1-8
CB0: 1 2T; HGD0, HGC0; 1100, 1100; 1 2B
CA9: 1 2T; HGB9, HGA9; 1100, 1100; 1 2B
CA0: 1 2T; HGB0, HGA0; 1100, 1100; 1 2B — TO RLYS CA1-8

LLGD 700 S -48 — 3 LLGD 1B 2 LLGD
HCB 700 K -48
LLGC 700 S -48 — 3 2 1B LLGC
LLGB 700 S -48 — 3 LLGB 1B 2 LLGB
HCA 700 K -48
LLGA 700 S -48 — 3 2 1B LLGA

XC: MG 4.5 AJ -48

CA0-9 5 6T CA0-9
CB0-9 5 6T CB0-9

NOTE:
MULT TO MCDRLYS FOR OTHER MKR'S & TO OTHER TB-RLYS IN SAME N.G.

NC (TEL NO.)
4 14 24 34 44 ... 84 94
0 10 20 30 40 ... 80 90
TO

TBO MCD
0 40 "NC0"
10 50 "NC10"

MULT TO OTHER GROUPS OF 100 NO'S IN N.G.C AS REQUIRED

LLGE: SGR; -48 AH 880; LLGA 1 2T, LLGB 1 2T, LLGC 1 2T, LLGD 1 2T, GLH 1 3B 1 2

L19: S 1 2B L19; 7 6B S
L10: S 1 2B L10; 7 6B S
L9: S 1 2B L9; 7 6B S
LO: S 1 2B LO; 7 6B S

XF3 W 3 4T XF
XF: 2 1T; XF1: -48 V 700; XF3: -48 W; XF2: 2 1T W
XF1: 5 6T; 3 4B XF1
XF3: 3 4B; 1 2T XF3; -48 P 1000 MT; 10 11T MT
XC1: 4 3T XC1; TRO 3 4B 8B 7 A TRO
XC: V 2 1T; 4 5B XC1; XC1 2500 V -48
XC

* TERM MARKER CKT. SD 25283-01 155 47D
NUMBER GROUP CONN CKT. SD 25276-01 155-20D

TERMINATING MARKER
NF AND NC CROSS CONN.
10-10

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NO. 1 CROSSBAR OS11-1 5 SHEETS, SHEET 2

TERMINATING MARKER

N.G.C B.R.

TO FIRST MKR NF 0-19

TO INT. MKR NF 0-19

TO INT MKR NF 0-19

TO INT MKR NF 0-19

"NF 0-19"

MCB RLY

NF 19	NF 9	NS 19	NS 9	HF 19	HF 9
59	49	39	29	19	9
50 NF 10	40 NF 0	30 NS 10	20 NS 0	10 HF 10	0

CONTACT NO'S

MCB MCB MCB MCB MCB MCB

MCC RLY

		RF 19	RF 9	TF 19	TF 9
NP	49	39	29	19	9
	PTN				
	TN				
	PN				
	OFT				
	MR				
	SOF				
	XG				
	XG				
50	TMB	30	20	10	0
		RF 10	RF 0	TF 10	TF 0

CONTACT NO'S

NF0 NF9 NF10 NF19

L0 L9 L10 L19

LE1 LE1 LE2 LE2

HT0 HT9 HT10 HT19

TO OS 529 A

XS

TR3

-48 -48

CK8

LC9

THRU LE-CHAIN CKT. OS 511-1 SHEET 1

N.G.C

OFT MCC

OFT

RF

HF

TF

XF1 XF XF2

XF3 XF

LC0

HF0 LE4

RF0 LE8

TF0 LE10

TO INT LC-RLYS

HF0 LE3

RF0 LE8

TF0 LE10

OS 520

HF HF

RF RF

TF

LC9 LCF9

LC0 LCF0

TF 0-9 RF 0-9 HF 0-9

MCB

MCC

TO FIRST MKR

TO INT MKR

"RF, TF, HF0-9"

TO MCB & MCC RLYS FOR SAME MKR. IN OTHER N.G.C.'S

OTHER N.G.C.'S

TB RLY

00 01 02 03 04 05 06 07

T.S. FOR TB RLYS IN BLOCK RLY FRAME SEE SHEET 4

HF9 HF0

HF0-9

TF0-9

RF9 RF0

RF0-9

XG2 XGA

STRAPS STRAPS

RF HF XF TF HF RF

TO TB00,0 TO TB00,1

TO TB00,4

TO TB01,0 TO TB01,1

TO INTERMEDIATE HUNDRED BLOCKS

TO TB07,4

TERMINATING MARKER

NF, RF, TF & HF LEAD MULT.

OS 511-1

5 SHEETS, SHEET 3

NO. 1 CROSSBAR

ISSUE 1 RHG

DATE 2/17/64

5 SHEETS, SHEET 3

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38-Y-4214 5 SHEETS, SHEET 4

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DATE	2/11/54					

N.G.C. B.R

NC0-19 TO FIRST MKR
NC0-19 TO INT MKR
NC0-19 TO INT MKR
NC0-19 TO INT MKR
NC0-19

MCD MCD MCD MCD MCD

TO MCD RLY FOR SAME MKR. IN OTHER N.G.C.'S.

TB RLY

06 07 04 05 02 03 00 01

T.S.

LEAD	TERM
NF19	50
NF0	40
NS19	39
NS0	20
NC19	19
NC0	0

TERM STRIP FOR TB RLYS IN BLOCK RLY FRAME.

N.C. TEL NO.

HG D
HG C
HG B
HG A

00 01 07

NC TEL NO.

TO TB00,0 TO TB00,1 TO TB00,4 TO TB01,0 TO TB01,1 TO INTERMEDIATE HUNDRED BLOCKS TO TB07,4

MCD FOR FIRST MKR.

MCD

MCD FOR INT MKRS

MCD

MCD FOR LAST MKR

HGD 0-9
HGC 0-9
HGB 0-9
HGA 0-9

LAST MCD OTHER N.G.C

"HGA,B,C,D 0-9"

TO MCD RLY FOR SAME MKR IN OTHER NGC'S

LAST MARKER

NC0 NC9 NC10 NC19

L0 L9 L10 L19

MCD RLY.

CONTACT NO.'S

NC 19 59	NC 9 49	HG D9 39	HG C9 29	HG B9 19	HG A9 9
50 NC 10	40 NC 0	30 HG D0	20 HG C0	10 HG B0	0 HG A0

TB RLY

CONTACT NO.'S

NF 19 59	NF 9 49	NS 19 39	NS 9 29	NC 19 19	NC 9 9
50 NF 10	40 NF 0	30 NS 10	20 NS 0	10 NC 10	0 NC 0

CB9 HGD9 HGC9 LLGD

CB4 HGD4 HGC4 LLGC HCB

CB0 HGD0 HGC0 TO OTHER CB- RLYS

CA9 HGB9 HGA9 TO OTHER CA- RLYS

CA4 HGB4 HGA4 LLGB HCA

CA0 HGB0 HGA0 LLGA

XC XC

TERMINATING MARKER

NC AND HG-LEAD MULT. 10 - 10

NO. 1 CROSSBAR OS 511-1 5 SHEETS, SHEET 4

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38-Y-4214

5 SHEETS, SHEET 5

ISSUE	1	R(HG)				
DATE	2/1/65					

EXAMPLE:

TYPICAL EXAMPLE OF SERVICE ORDER

IN DUE OUT

TEL- 0019

NAME

ADD

CL-IMR

NF X CONN NC X CONN PTY-1

DIST. FR	UG. PR	LCH	COL	SW-V	REG
		10	10	95	

L.CH. 0 & PTY 1 = RFO NF X CONN
¼ CH. & SW 9 = 09 NC X CONN

EXAMPLE:

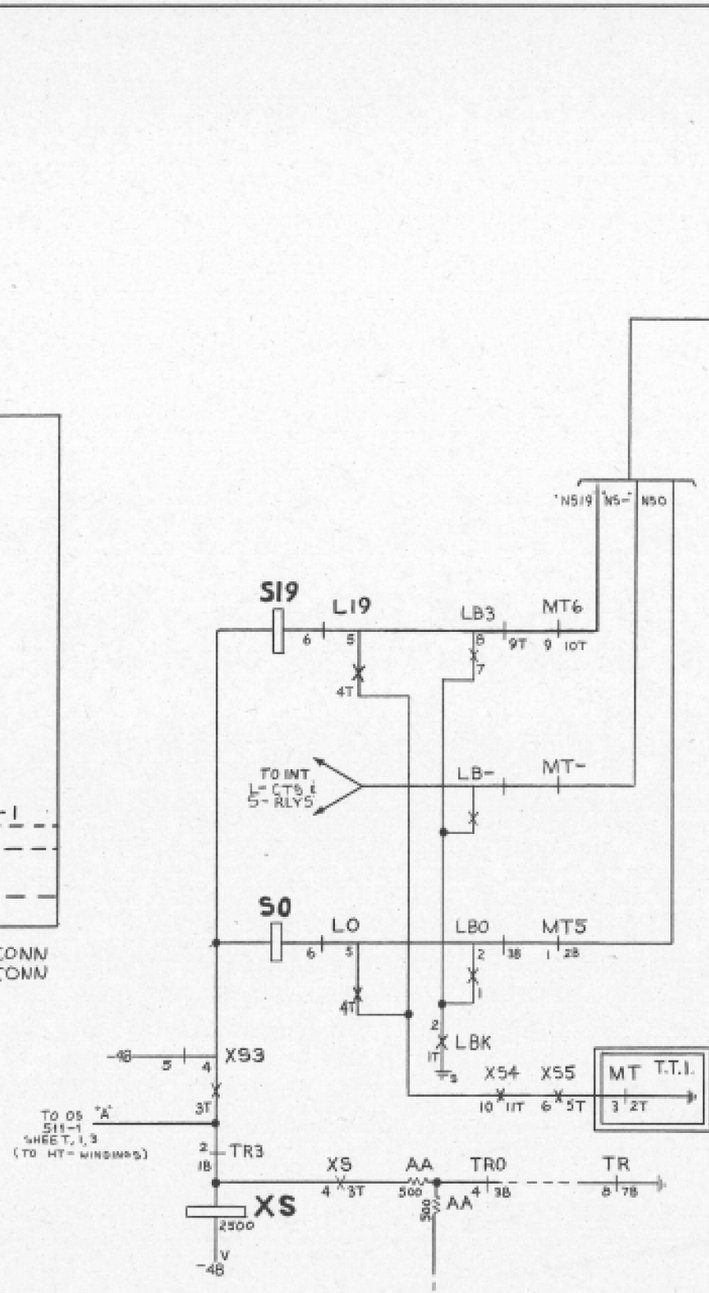
LINE NUMBER

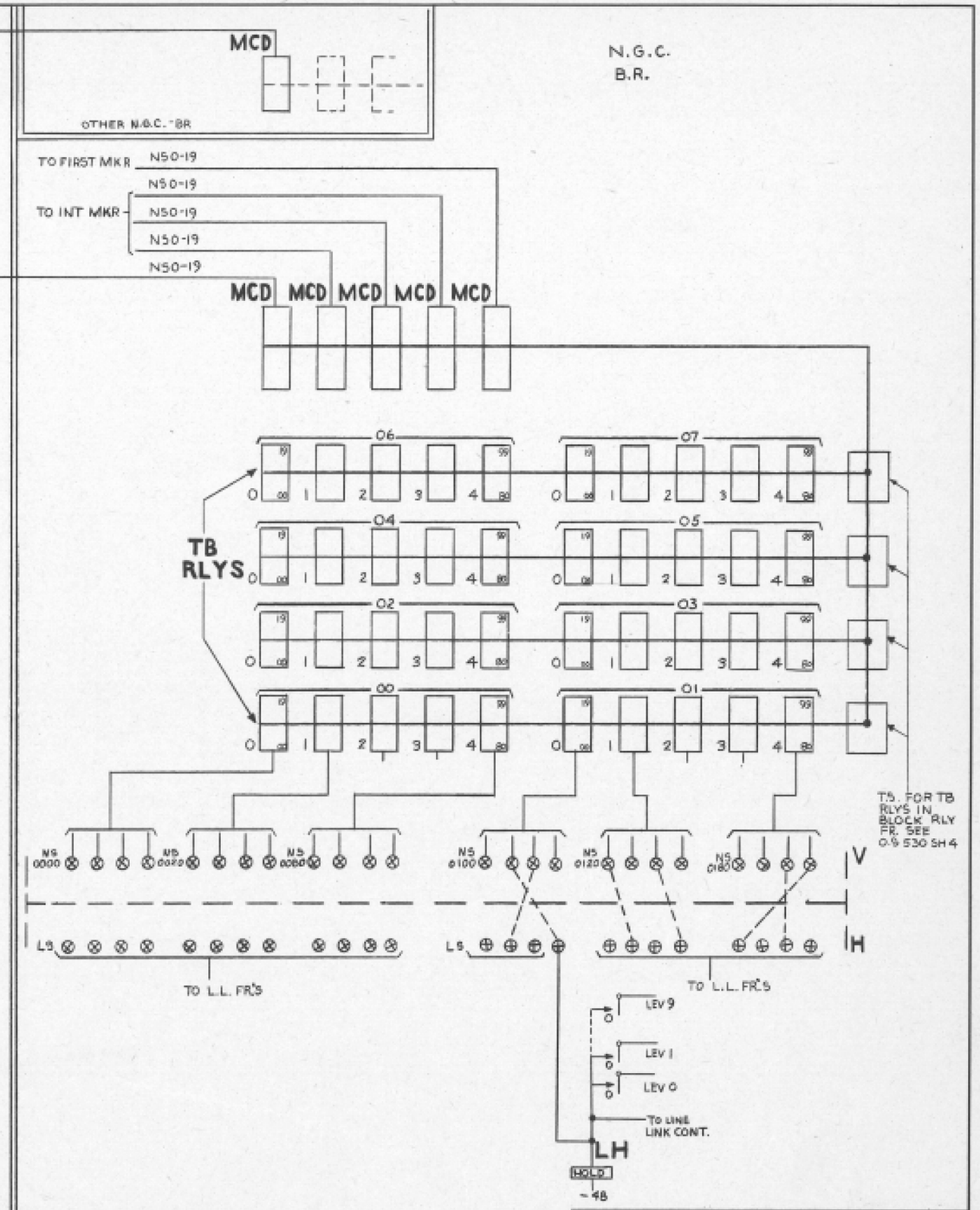
MU6-0619

EQUIPMENT NO.

0 B 0359

LINE CHOICE — QUARTER CHOICE — COLUMN — HORIZ GRP — VERT





TERMINATING MARKER

NS LEAD MULT.

NO. 1 CROSSBAR OS 511-1

5 SHEETS, SHEET 5

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38-Y-4218

ISSUE	DATE	BY
1	8/27/57	ING

FIRST MARKER

PN 5 68 PN 1775 5 -48 PN

TN 5 68 TN 2500 5 -48 TN

PTN 5 68 PTN 2500 5 -48 PTN

T 7

T 45 275 2 1B

ING 2 1B

IT 5 6T

TN 5 6T

IPT 5 6T

BLK 2 1T

PN 5 6T

PTN 5 6T

IP 6 5T

K1

CK1 1 2B CK4 5 9T CK6 11 12T

P 2

P 45 275 2 1T ING

TO MULTI CTS RLY

TO MULTI CTS RLY

TO OTHER N.G.C. MC RLYS FOR SAME MKR

AUX 16 18 ALF ANF ALF ANF OFT PT 0 1 2 3 4 5 6 7 8 9 PTN PTN TN TN PN PN

TO

UPPER RIGHT NF.T.S.

AUX 16 18 OFT ANF ALF ANF ALF PT 0 1 2 3 4 5 6 7 8 9

TO

LOWER RIGHT NF.T.S.

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N.G.C 12

TO INT MKR

TO LAST MKR

MCC 48 47 46

TO INT BLOCKS OF 100 #5 ON SAME FR

BR-0

BR-12

AUX T.S

PTN PTN TN TN PN PN 30 32 34 TO 39

20 10 00

PT 0 1 2 3 4 5 6 7

PCHG'S AT RIGHT UPPER NF. T.S DESIG. AUX.

AUX. T.S.

70 60 50 40

PT 0 1 2 3 4 5 6 7

6 5T XHB0 XHB7

0000 TO 0799

PCHG'S AT RIGHT LOWER N.F.T.S DESIG: AUX

XHB0 XHB1 XHB2 XHB3

9600 - 9999

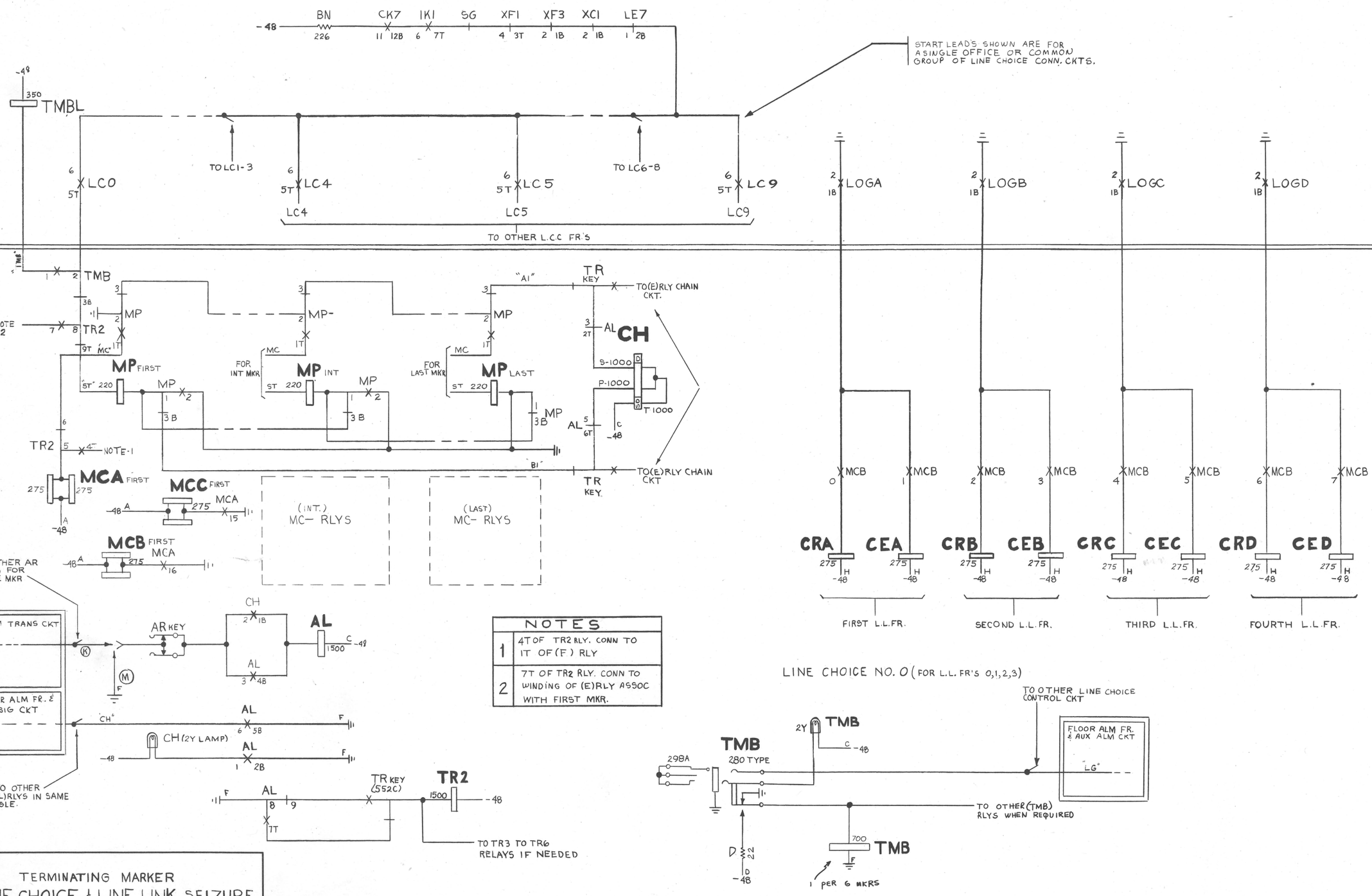
TERMINATING MARKER

"PT" CROSS CONN

#1 CROSS BAR

OS 511-2

TERMINATING MARKER



NOTES	
1	4T OF TR2 RLY. CONN TO 1T OF (F) RLY
2	7T OF TR2 RLY. CONN TO WINDING OF (E) RLY ASSOC WITH FIRST MKR.

LINE CHOICE NO. 0 (FOR L.L. FR'S 0,1,2,3)

TERMINATING MARKER
LINE CHOICE & LINE LINK SEIZURE

OS-512-1 2 SHEETS, SHEET 1

#1 CROSSBAR

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2 SHEETS, SHEET 1

38-Y-4231

38-Y-4231 2 SHEETS, SHEET 2

ISSUE	DATE
1	2/1/54

TERMINATING MARKER

"CK" TMBN SEE 05-506 XTMB TR

LK LK1 1500 J -48

LK 1500 W L -48

LOG

LGA LGB LGC LGD

LOGA LOGB LOGC LOGD P-200 S-200

TERM ACCESSIBLE FOR TST PICKS

TMBL LLGA LLGB LLGC LLGD

LK

LGA 700 -48

LGB 700 -48

LGC 700 -48

LGD 700 -48

GC1 EH GC1 OH

LOGA LOGB LOGC LOGD

TO INT. CA-CB-RLY CONTACTS

CAO CA9 CAO CA9 CBO CB9 CBO CB9

LINE CHOICE CONN O

TO MCA RLYS FOR SAME MKR. DIFF. L.C. CONN

TO MCA RLYS FOR DIFF MKRS SAME L.C. CONN.

HGA0 HGA9

CK "LRA" "LRB" "LRC" "LRD"

MCA

TO L.L. FR "B" OR SECOND

TO L.L. FR "C" OR THIRD

TO L.L. FR "D" OR FOURTH

TO L.L. FR "B" OR SECOND LEADS: HGB0 TO HGB9

TO L.L. FR "C" OR THIRD LEADS: HGC0 TO HGC9

TO L.L. FR "D" OR FOURTH LEADS: HGD0 TO HGD9

CR- CE- PC

TRAFFIC REG CKT

LOA LRA LEA

TRL AC RE DS G- RL 700 -48

COMPLETE PATH SHOWN ON OS 125-1

LINE LINK FRAME O "A" QUARTER CHOICE

FB CB FA CA

LA FA LB FB

"MA" OS 125-2 "MB" OS 125-2

LA LB 700 TA TB -48

HO H9

HG0 HG9 275 275 D -48

TERM MKR CKT SD-25283-01 ISS-47D
SUB. LINE LINK & CONT. CKT SD-25553-01 ISS.
LINE CHOICE CONN CKT SD-25275-01 ISS. 18D

TERMINATING MARKER

LINE CHOICE & LINE LINK SEIZURE

#1 CROSSBAR OS 512-1 2 SHEETS, SHEET 2

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NOTE: INC SEC HOLD & LINE LINK SEC HOLD APPLY TO 10-10 JOB		SWITCH	SELECT	HOLD
INC LINK	PRI	LC RELAY	TRUNK	CHANNEL RELAY
	SEC	CHANNEL RELAY	LC RELAY	LINE CHOICE
LINE LINK	SEC	CHANNEL RELAY	HG RELAY	LJ RELAY
	PRI	HG RELAY	CHANNEL RELAY	S LEAD

INCOMING LINK AND CONN. CKT.

INCOMING TRUNKS

TO CONTACT 49

TO CTS 43 TO 48

TO CONTACT 49

TO CTS 41 TO 48

SW-9

SW9

SW-0
160 TYPE INC

SW0
100 TYPE INC

TO DISC SEL MAG OPER PATH

FOR 160 TYPE INC

FOR 100 TYPE ONLY & 100 TYPE INC IN COMB WITH 160 TYPE INC

TO SW8 TO SW7 TO SW6 TO SW5 TO SW4 TO SW3 TO SW2 TO SW1

LC9 LC8 LC7 LC6 LC5 LC4 LC3 LC2 LC1 LCO

MC MC MC MC MC MC MC-

TO OTHER MKR'S

TO MC- RLY FOR SAME MKR ON OTHER INC LINK FR'S

LCO 40 — TO OTHER LC- RLYS — LCO 42

TI 28 — TI 68

M0 DISC. LEVEL

M2 NON DISC. LEVEL

LCO 40 — TI 2B — M0 NON DISC LEVEL

MC 52 IF — IF IN USE LAMP — B KEY -48

TI 12T — F-

TI 11T — TO OTHER LC RLYS — LC- 50 — LC-(0-9)

BELOW IS SHOWN FOR 160 TYPE INC.

-48 TI 950 — MC- 53 — TIA 55

SEL 2 — CL2 PT2

SEL 4 — CL4 PT4

SEL 9 — CL9 PT9

FS — LC- 51 MC — INB 6T — FS 500 L -48

MAN — LC- 52 MC — INB 6T — MAN 500 L -48

TOL — LC- 53 MC — INB 6T — TOL 500 L -48

IT — LC- 54 MC — IT 500 L -48

IP — LC- 55 MC — IP 500 L -48

IPT — LC- 56 MC — IPT 500 L -48

FS 6 7B — MAN 6 7B — TOL 6 7B

IT 5 6B — IP 5 6B — IPT 5 6B

FS MAN TOL IT IP IPT

CK7 6 5B — XPS 3 7 — XPS

XPS1 2 1T 2500 W — XPS1 -48

INC 3 4T — OFB 6 5A — DL 3 4T — LK 6 5B — GTI 1 2B — TE 2 1B

160 TYPE ONLY COMB 160 100 TYPE

100 TYPE ONLY

XPS

XPS 40 — P- 10 — S- 200 — BIAS WINDING

BC 1111 — CKB 7 6T

CKB 10 11B AD -48

ISSUE	1	CR
DATE	2/9/54	

TERMINATING MARKER

INC SELECT MAG OPER
(160, 100 TYPE INC & 160 & 100 TYPE INC COMB.)

OS 513-1

4 SHEETS, SHEET 1

NO. 1 CROSSBAR

4 SHEETS, SHEET 1

38-Y-4237

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38-Y-4237 4 SHEETS, SHEET 2

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INCOMING ODD FRAME

INCOMING EVEN FRAME

OFFICE EQUIPPED FOR MATE FRAME OPER.
FOR FRAMES WHICH HAVE MATE FRAMES EQUIPPED.

SD · FIG 8, 9 & 10
WIRING · V

ES FIG 9 — 950 — FE 3 4T — ESM — TR 5 6B — E 226 — −48 — TR 6 5T — ES FIG 8 — 950

FE FIG 9 — 2500 — FE 1 3B — P1 — FE 2 1B — FE FIG 8 — 2500

FP FIG 9 — 2500 — FP 1 3B — P — FP 2 1B — FP FIG 8 — 2500

RS FIG 9 — 950 — FP 3 4T — K — FP 5 3T — RS FIG 8 — 950

FP 2 1T — L — FP 1 2T — TR 95 — TR FIG 10 — −48

ESM FIG 9 — 2Y — ESM — B 226 — −48

TR 11 12T — RS — ES 12T — TR 2T — ESM FIG 8 — 2Y — B 226 — −48

TO OTHER INC LINK FR.

MC 43 EPS — MC 42 MPS — MC 41 RSM — MC 40 ESM — MC 44 MK0 — MC 45 MK2 — MC 47 MK3 — MC 46 MK1 — MC 48 TR

MC 47 MK3 — MC 46 MK1 — MC 44 MK0 — MC 45 MK2 — MC 40 ESM — MC 41 RSM — MC 42 MPS — MC 43 EPS — TO OTHER MC RLYS ON SAME FRAME

TR1 11 12T — TR1 2 1T — TR1 4 3B — TR1 10 11B — TR1 7 8 9B — TR1 6 5T

-48 BE 226 — SL1 1 2B — CON1 6 5T — LOGA 6 5T — LOGB 6 5T — LOGC 6 5T — LOGD 6 5T — BF 226 — -48

MK0 — 700 — MK0 — L — -48

MK1 — 2500 — MK1 — L — -48

ESM — TR3 5 6T — 700 — TR1 — -48

TR2 — -48 A — 200 — TR2

TR3 — -48 A — 950 — "TR2" TO TERM MKR CKT

TO TERM MKR CKT. - - - "TR2" - - - TR2

TR3 — 950 — A — -48

* INC LINK & CONN CKT SD 25457-01 ISS 12D

TERM MARKER X

TERM MARKER Y

AMERICAN TELEPHONE & TELEGRAPH CO.

TERMINATING MARKER

INC SELECT MAGNET OPER.

NO. 1 CROSSBAR

OS 513-1

4 SHEETS SHEET 2

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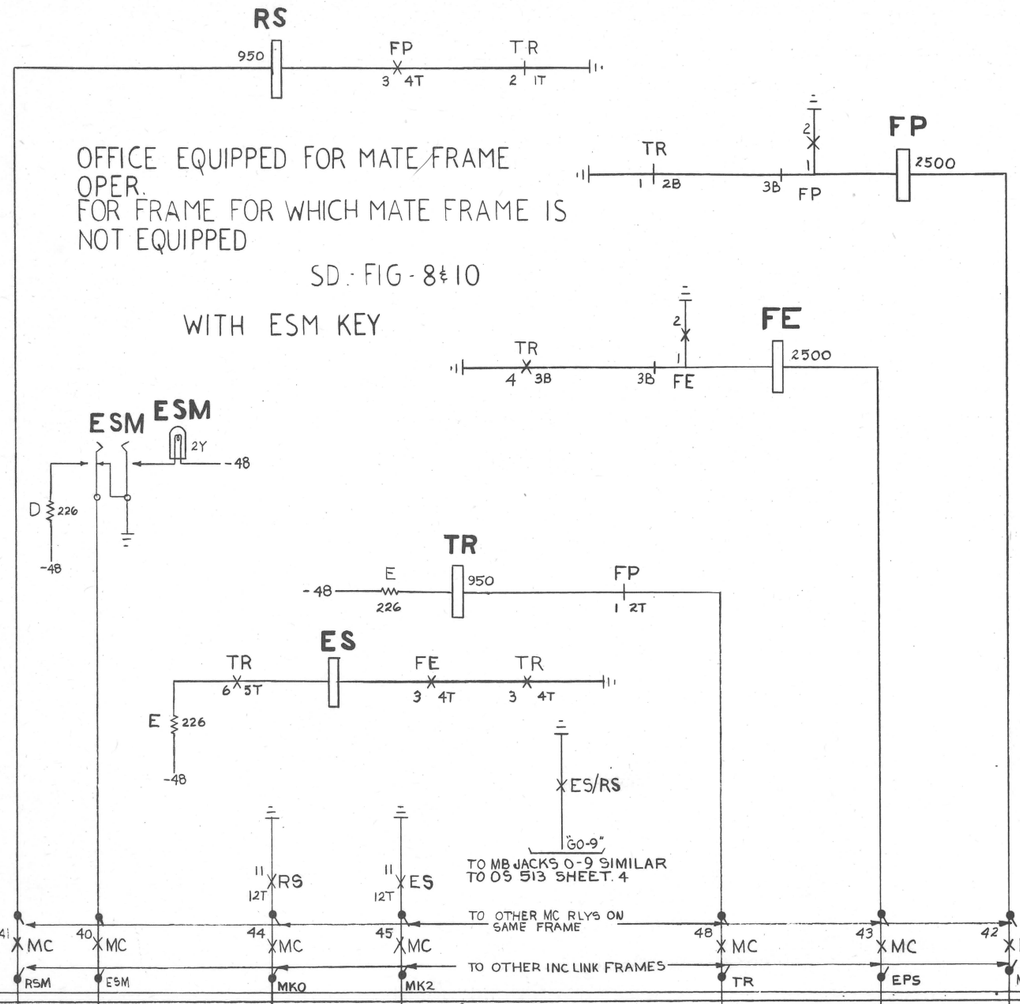
INC LINK & CONN CKT

OFFICE EQUIPPED FOR MATE FRAME OPER.
FOR FRAME FOR WHICH MATE FRAME IS NOT EQUIPPED

SD: FIG - 8 & 10

WITH ESM KEY



TERMINATING MARKER

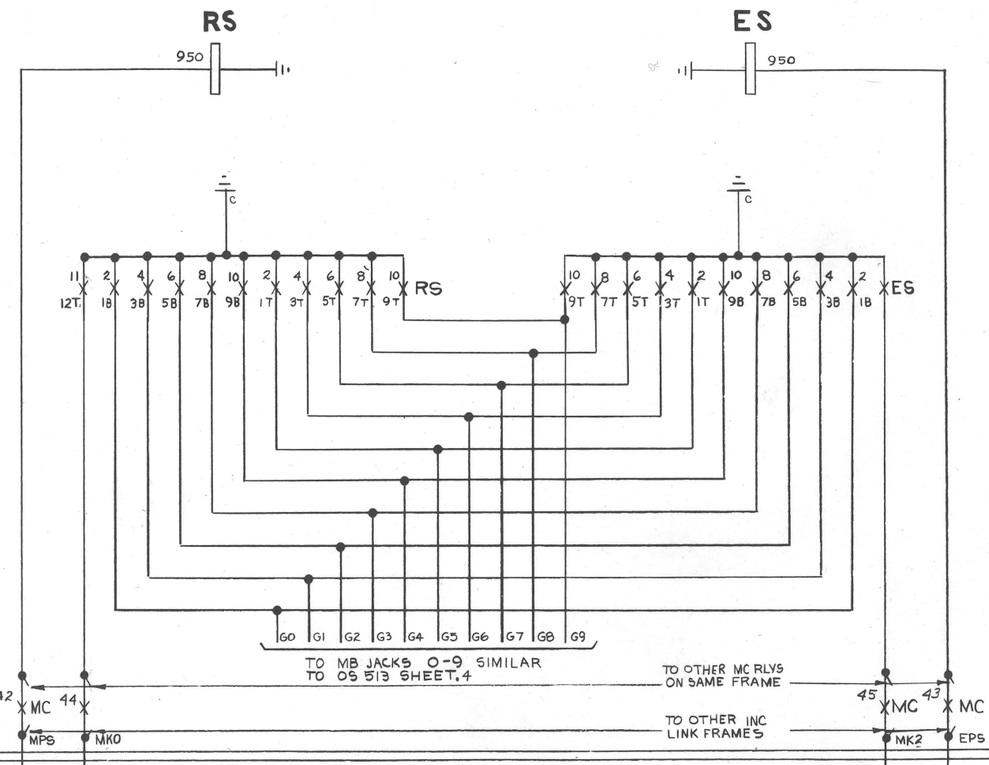
INC SELECT MAGNET OPER

OS 513-1

4 SHEETS, SHEET 3

NO. 1 CROSSBAR

OFFICE NOT EQUIPPED FOR MATE FRAME OPERATION SD FIG 11 WITHOUT ESM KEY



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38-Y-4237 4 SHEETS, SHEET 4

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SECONDARY FR.

SECONDARY EXTENSION FR.

MB9

MB5

MB4

MB0

OR-9R

OL-9L

OS 514

RS 10 9T

ES 10 9T

RS 2 1T

ES 2 1T

RS 10 9B

ES 10 9B

RS 2 1B

ES 2 1B

G9

G5

G4

G0

LC9

LC5

LC4

LC0

TO SEL 5 SW9

TO SEL 5 SW 5

TO SEL 5 SW4

TO SEL 5 SW0

TO SEL 4 SW9

TO SEL 4 SW 0

TO LC4 CTS 9R 5R 4R 0R

600 SEL 9 -48

600 SEL 4 -48

600 SEL 0 -48

600 SEL -48

600 SEL O -48

SW9

SW5

SW4

SW0

TO CORR(SS) ON EXT SW.

TERMINATING MARKER

INC SELECT MAGNET OPER

NO. 1 CROSSBAR

OS 513-1 4 SHEETS, SHEET 4

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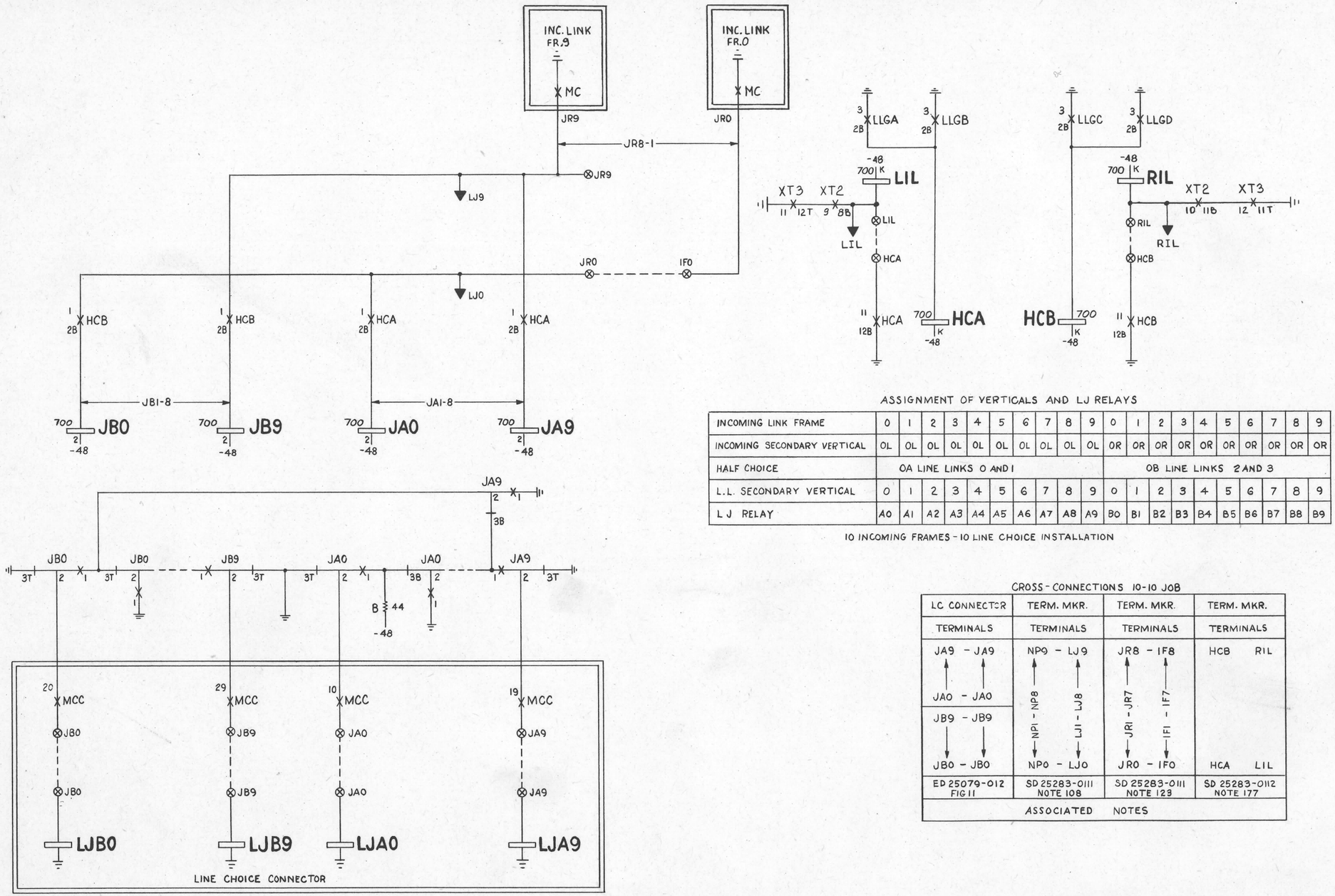

ASSIGNMENT OF VERTICALS AND LJ RELAYS

INCOMING LINK FRAME	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
INCOMING SECONDARY VERTICAL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
HALF CHOICE	OA LINE LINKS 0 AND 1										OB LINE LINKS 2 AND 3									
L.L. SECONDARY VERTICAL	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
LJ RELAY	A0	A1	A2	A3	A4	A5	A6	A7	A8	A9	B0	B1	B2	B3	B4	B5	B6	B7	B8	B9

10 INCOMING FRAMES - 10 LINE CHOICE INSTALLATION

CROSS-CONNECTIONS 10-10 JOB

LC CONNECTOR	TERM. MKR.	TERM. MKR.	TERM. MKR.
TERMINALS	TERMINALS	TERMINALS	TERMINALS
JA9 - JA9	NP9 - LJ9	JR8 - IF8	HCB RIL
JA0 - JA0	NP1 - NP8 / LJ1 - LJ8	JR1 - JR7 / IF1 - IF7	
JB9 - JB9			
JB0 - JB0	NP0 - LJ0	JR0 - IF0	HCA LIL
ED 25079-012 FIG 11	SD 25283-0111 NOTE 108	SD 25283-0111 NOTE 123	SD 25283-0112 NOTE 177
ASSOCIATED NOTES			

TERMINATING MARKER
CHANNEL TEST
10-10 INSTALLATION

OS514-1

3 SHEETS, SHEET 1

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3 SHEETS, SHEET 2

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INCOMING LINK FRAME (4)

SECONDARY SWITCH

PRIMARY SWITCH

(25) INCOMING TRUNK

INCOMING LINK 3 WIRES

(P) HOLD -48

(S) HOLD -48

ALL LC RELAYS SAME FRAME

LC2

SMB JACK

MC-

TO ALL MC RELAYS SAME FRAME

TO MC RELAYS FOR SAME MKR. OTHER FRAME

THRU L.J.G.F.

OL 5L 9L 0R 5R 9R

AK

LIL RIL

IK 5-1750 W -48

OS 518

AB9 AB5 AB0

CH9 CH5 CH0

NP9 NP5 NP0

LJ9 LJ5 LJ0

OS 516-1 JP RELAYS

OS 535-1 JPN RELAY

LINE LINK FRAME (4)

SECONDARY SWITCH

LINE JUNCTOR 3 WIRES

HOLD MAG.

TO SAME SW & VERT ON L.L. 5

LINE LINK 3 WIRES

PRIMARY SWITCH

COL16 COL17 COL18 COL19

LL.5

TO OTHER (HG) RELAYS IN SAME LINE CHOICE

TO OTHER (HG) RELAYS ON SAME L.L.FR.

HG5

BK5 ONE PER LINE CHOICE

BK0 BK4 BK8

1000

CK

LJA4

LINE CHOICE CONNECTOR

CR-CE (A)

MCC-

MCA

"S" T&R SUB LINE

LL9 LL5 LL0 AK TK

LFB

OS 524 NO TEST

LFA

LLB

XT (BD) 700 275

TO LOCKING PATH

XT1 XHG TK

TERMINATING MARKER
CHANNEL TEST
10-10 INSTALLATION
OS 514-1

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INCOMING LINK FRAME 9

SEC SWITCH 9

LEFT

RIGHT

SEC SWITCH 0

LEFT

RIGHT

C, D TO LC 0

A, B TO LC 0

LINE JUNCTOR DISTRIBUTION

LC 9

LINE LINK 36

LINE LINK 37

LINE LINK 38

LINE LINK 39

SEC SWITCH 9

"A" FRAME

"B" FRAME

"C" FRAME

"D" FRAME

TO INC 0 H, G

SEC SWITCH 0

TO INC 0 F, E

LC 0

LINE LINK 0

LINE LINK 1

LINE LINK 2

LINE LINK 3

INCOMING LINK FRAME 0

SEC SWITCH 9

LEFT

RIGHT

SEC SWITCH 0

LEFT

RIGHT

G, H TO LC 9

E, F TO LC 9

SEC SWITCH 9

"A" FRAME

"B" FRAME

"C" FRAME

"D" FRAME

TO INC 9 D, C

SEC SWITCH 0

TO INC 9 B, A

LINE JUNCTOR GROUPING FRAME

TERMINATING MARKER
CHANNEL TEST
10-10 INSTALLATION

NO. 1 CROSSBAR

OS 514-1

3 SHEETS, SHEET 3

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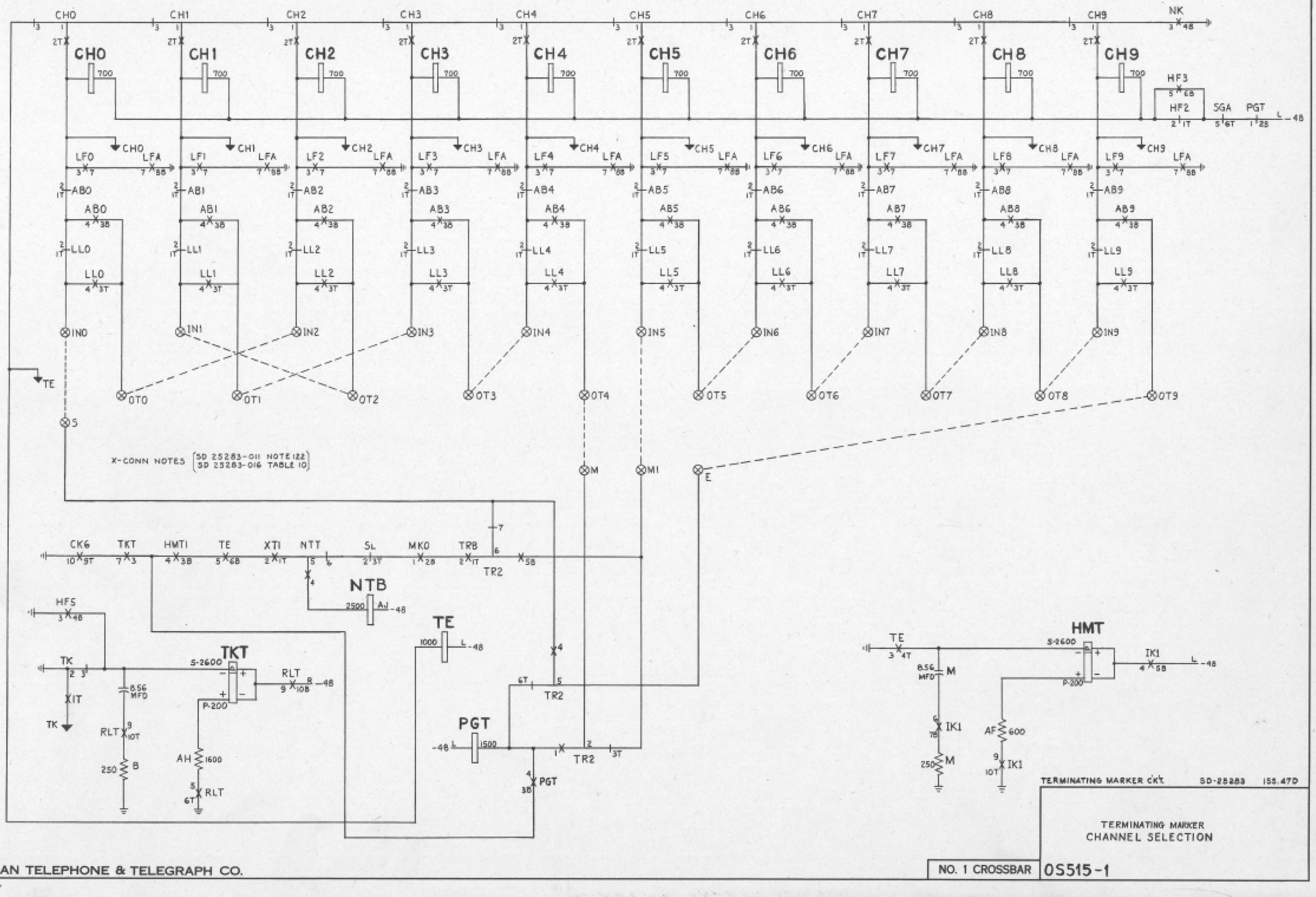

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PRIMARY SWITCH 9

PRIMARY SWITCH 0

LINE LINK FRAME

SECONDARY SWITCH 9

SECONDARY SWITCH 5

SECONDARY SWITCH 0

HG 8 - HG 1

HG9 34 30 20 34 30 HG0 80

SMB 9
SMB 5
SMB 0

SMB SM5 SM0

"A" FRAME
"B" FRAME
"C" FRAME
"D" FRAME

MCB 29 25 20
MCB 39 35 30
MCB 49 45 40
MCB 59 55 50

LINE CHOICE CONN.

9 1 1 LGA
9 1 1 LGB
9 1 1 LGC
9 1 1 LGD

CH0 2 1 38 SMG 2 1B AL 240
CH5 2 1 38 SMG 2 1T AL 240
CH9 2 1 38 SMG 10 9T AL 240

XSM 10 W -48

TE 1 2T

LINE CHOICE CONN. CKT. SP 25275-01
LINE LINK FRAME CKT. SP 25553-01
* TERMINATING MARKER CKT. SP 25283-01 195, 47 P

TERMINATING MARKER
OPERATION OF LINE LINK
SELECT MAGNETS
OS 515-2

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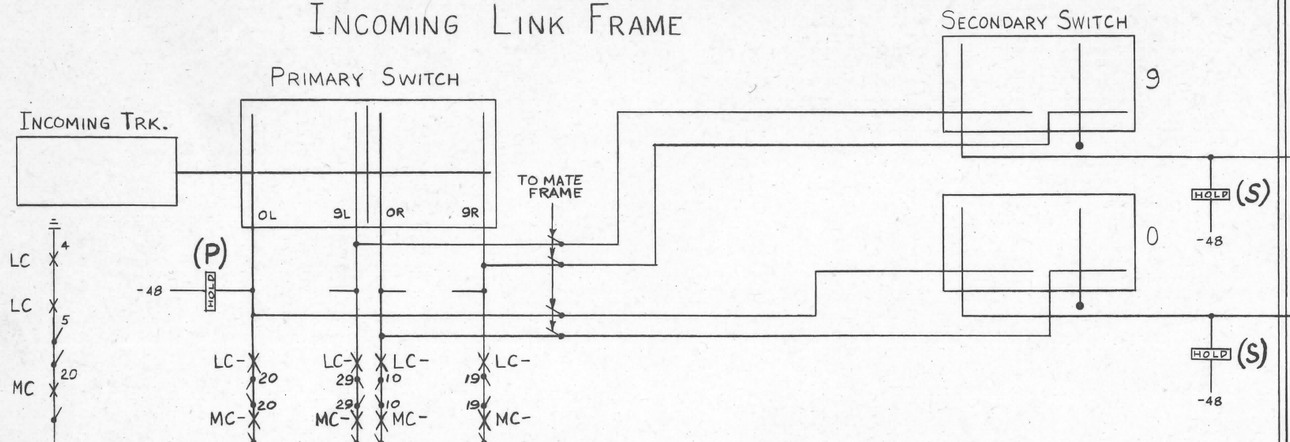
INCOMING LINK FRAME



PART OF TABLE 20
SD 25283-0117

7 OR 8 FRAMES OR GRPS	JP0	JP1	JP2	JP3	← "JP" RELAYS
AB9	G		G	G	
AB8		G	G	G	
AB7	G	G	G		
AB6	G	G		G	
AB5	G		G	G	
AB4		G	G	G	
AB3	G	G	G		
AB2	G	G		G	
AB1	G		G	G	
ABO		G	G	G	

"AB" TERMS — "G" TERMS

PART OF TABLE 19
SD 25283-0117

7 OR 8 FRAMES OR GRPS	JP0	JP1	JP2	JP3	← "JP" RELAYS
LJ9		AB9			
LJ8	AB8				
LJ7				AB7	
LJ6			AB6		
LJ5		AB5			
LJ4	AB4				
LJ3				AB3	
LJ2			AB2		
LJ1		AB1			
LJO	ABO				

"LJ" TERMS — "AB" TERMS

PART OF TABLE 16
SD 25283-0117

7 OR 8 FRAMES OR GPS	0	1	2	3	4	5	6	7	← "LCA" RELAY
J3	3	2	1	0	3	2	1	0	
J2	2	1	0	3	2	1	0	3	
J1	1	0	3	2	1	0	3	2	
JO	0	3	2	1	0	3	2	1	

"J" TERMS — JP TERMS

TERMINATING MARKER
CHANNEL TEST
8-8 INSTALLATION

OS 516-1

5 SHEETS, SHEET 1

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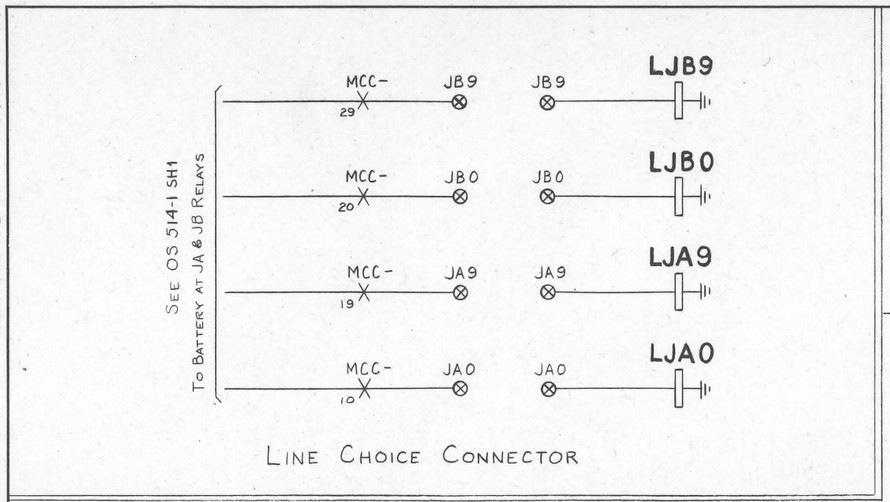


LINE CHOICE CONNECTOR

JUNCTOR SUBGROUPS FOR TEST 8-8 OR 8-16 INSTALLATION

No. of Inc. Lk. Frs.	No. of L.C. Half Choices	No. of Inc. Lk. Fr. Grps.	No. of L.C. Half Choices	No. of Junctors per I.F. per Half Ch.	Junctor Subgrp 1st	Junctor Subgrp 2nd	Start of Testing	Overflow After Test of
8	16	8	32	12 or 13	10 JGA	2 or 3 JGE	JGA	JGA-JGE

PART OF TABLE 22
SD 25283-0117

PART OF FIG. 11 ED 25079-012

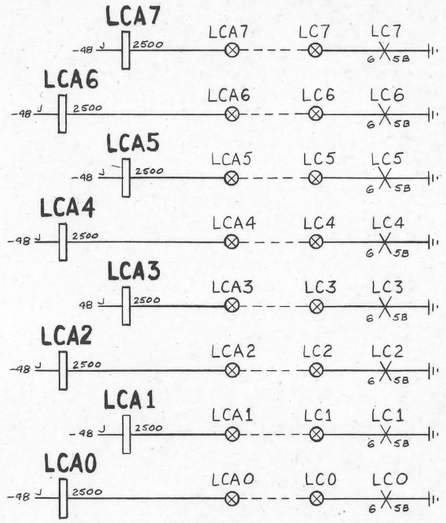
L.C. NUMBER	0	1	2	3	4	5	6	7
	8-8	8-8	8-8	8-8	8-9	8-9	8-9	8-9
	9-9	9-9	9-9	9-9	9-8	9-8	9-8	9-8

7 OR 8 LINE CHOICES

MARKER LJ LEAD — LJ RELAY

PART OF TABLE 15
SD 25283-0117

JP TERMS OF JGE REL.	7 or 8	JC TERMS
JP7	JC3	
JP6	JC2	
JP5	JC1	
JP4	JC0	
JP3	JC3	
JP2	JC2	
JP1	JC1	
JP0	JC0	



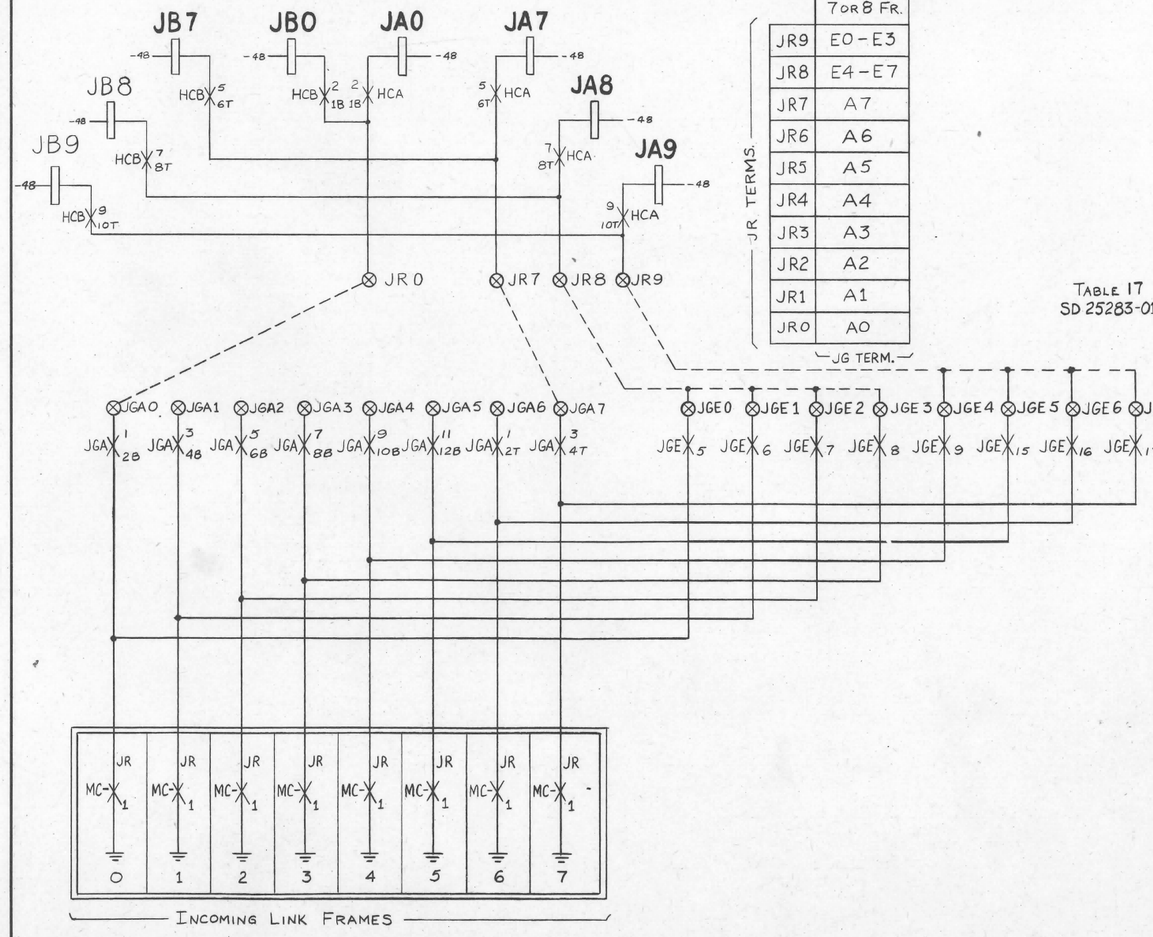
PART OF TABLE 21
SD 25283-0117

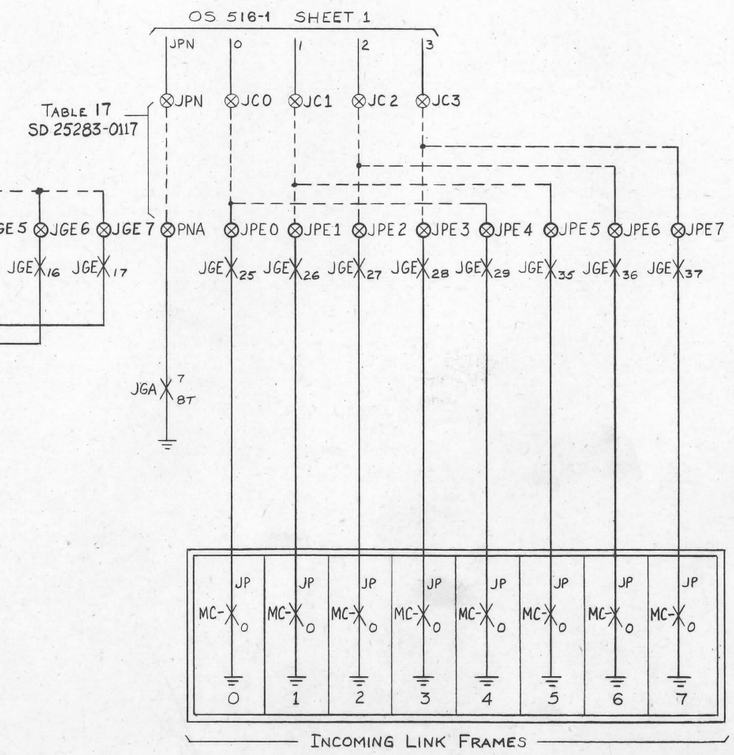
"LCA" Terms	No. of L.C. Conn. 8	16
LCA7	7	14,15
LCA6	6	12,13
LCA5	5	10,11
LCA4	4	8,9
LCA3	3	6,7
LCA2	2	4,5
LCA1	1	2,3
LCA0	0	0,1

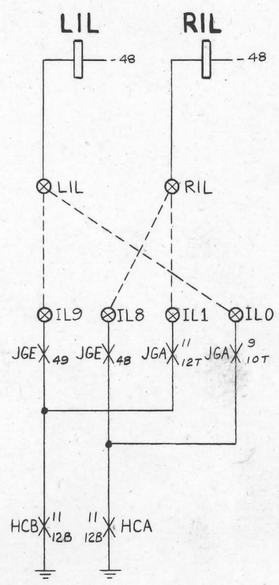
"LC" Terms

PART OF TABLE 14
SD 25283-0117

JR TERMS.	7 or 8 Fr.	JG TERM.
JR9	E0-E3	
JR8	E4-E7	
JR7	A7	
JR6	A6	
JR5	A5	
JR4	A4	
JR3	A3	
JR2	A2	
JR1	A1	
JR0	A0	







PART OF TABLE 18
SD 25283-0117

		Sub Group	Half Choice
IL9	LIL	2	HCB
IL8	RIL	2	HCA
IL1	RIL	1	HCB
IL0	LIL	1	HCA

TERMINATING MARKER
CHANNEL TEST
8-8 INSTALLATION

OS 516-1

5 SHEETS. SHEET 2

AMERICAN TELEPHONE & TELEGRAPH CO.

NO. 1 CROSSBAR

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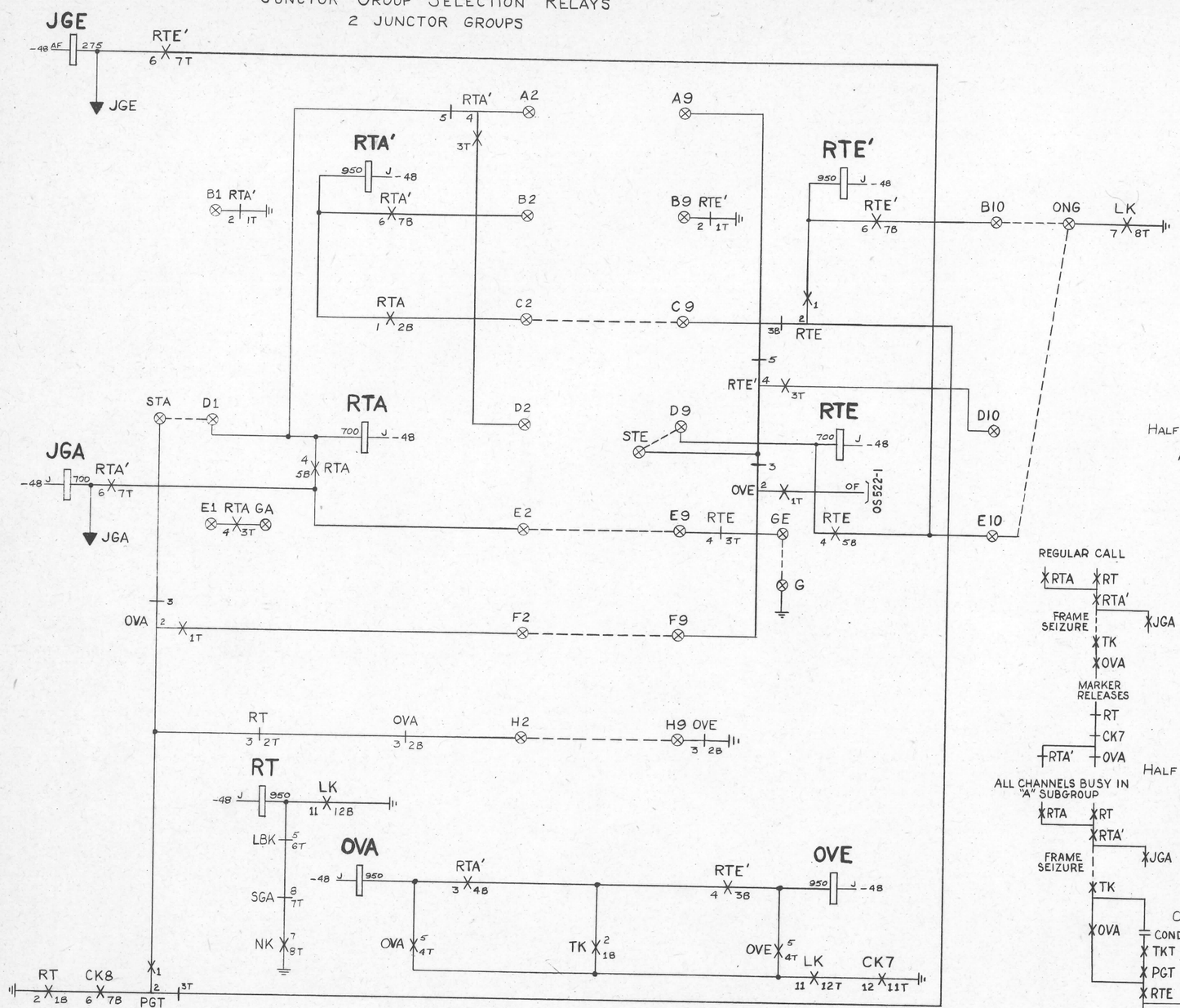
JUNCTOR GROUP SELECTION RELAYS
2 JUNCTOR GROUPS



X-CONN. OF JUNCT. WALK. CKT. 8-8 PLAN

2	9			10	1	G	ONG	
								A
								B
								C
								D
								E
								F
A	E							H
								G
								ST

PART OF TABLE 23
SD 25283-0117

LINE JUNCTOR DISTRIBUTION
"E" JUNCTOR GROUP 8-8 INSTALLATION

HALF CHOICE A

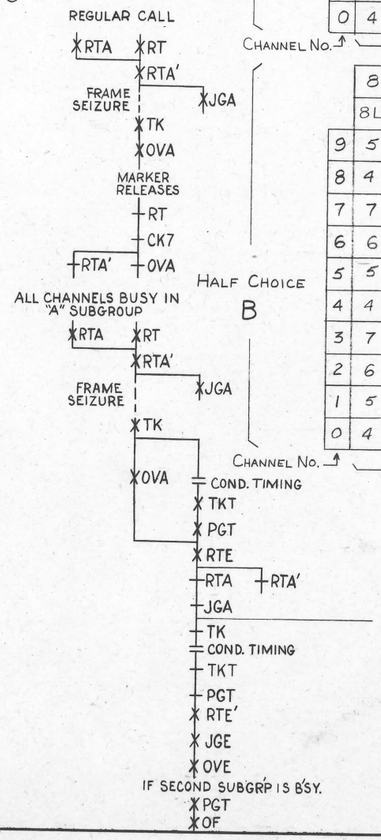
	0		1		2		3		4		5		6		7		LINE CHOICE NO.
	8	9	8	9	8	9	8	9	8	9	8	9	8	9	8	9	L.J. RELAY L.L. VERT. NO.
	8R	9R	8R	9R	8R	9R	8R	9R	8R	9R	8R	9R	8R	9R	8R	9R	INC. VERT
9	5	1	6	2	7	3	4	0	1	5	2	6	3	7	0	4	
8	4	0	5	1	6	2	7	3	0	4	1	5	2	6	3	7	
7	7	3	4	0	5	1	6	2	3	7	0	4	1	5	2	6	
6	6	2	7	3	4	0	5	1	2	6	3	7	0	4	1	5	
5	5	1	6	2	7	3	4	0	1	5	2	6	3	7	0	4	
4	4	0	5	1	6	2	7	3	0	4	1	5	2	6	3	7	
3	7	3	4	0	5	1	6	2	3	7	0	4	1	5	2	6	
2	6	2	7	3	4	0	5	1	2	6	3	7	0	4	1	5	
1	5	1	6	2	7	3	4	0	1	5	2	6	3	7	0	4	
0	4	0	5	1	6	2	7	3	0	4	1	5	2	6	3	7	

CHANNEL No. → INCOMING FRAME No.

HALF CHOICE B

	8	9	8	9	8	9	8	9	8	9	8	9	8	9	8	9	L.J. RELAY L.L. VERT. NO.
	8L	9L	8L	9L	8L	9L	8L	9L	8L	9L	8L	9L	8L	9L	8L	9L	INC. VERT.
9	5	1	6	2	7	3	4	0	1	5	2	6	3	7	0	4	
8	4	0	5	1	6	2	7	3	0	4	1	5	2	6	3	7	
7	7	3	4	0	5	1	6	2	3	7	0	4	1	5	2	6	
6	6	2	7	3	4	0	5	1	2	6	3	7	0	4	1	5	
5	5	1	6	2	7	3	4	0	1	5	2	6	3	7	0	4	
4	4	0	5	1	6	2	7	3	0	4	1	5	2	6	3	7	
3	7	3	4	0	5	1	6	2	3	7	0	4	1	5	2	6	
2	6	2	7	3	4	0	5	1	2	6	3	7	0	4	1	5	
1	5	1	6	2	7	3	4	0	1	5	2	6	3	7	0	4	
0	4	0	5	1	6	2	7	3	0	4	1	5	2	6	3	7	

CHANNEL No. → INCOMING FRAME No.



ISSUE	1
DATE	8/15/57

TERMINATING MARKER
CHANNEL TEST
8-8 INSTALLATION

OS516-1

5 SHEETS, SHEET 3

NO. 1 CROSSBAR

5 SHEETS, SHEET 3

38-Y-4128

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38-Y-4128

5 SHEETS, SHEET 4

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C&R	

TO INC. SEC SHEET 1

SECONDARY SW 9

LJ | DJ

LO-9

S → TO OTHER FRAME IN HALF CHOICE

SECONDARY SW. 0

LJ | DJ

LO-9

S → TO OTHER FRAME IN HALF CHOICE

LINK SPREAD

PRIMARY SW.

LO-9

NS TO NGC

(P) HOLD

LINE CHOICE 0

LL0-9 LL0-9

"A" LINE LINK

ALL(HG) ON SAME FRAME

TO SAME NUMBERED(HG) RELAYS IN SAME L.C.

HG X 5

HG0 X 25-29 35-39

HG1 X

OTHER HG RELAYS

"B" FRAME "C" FRAME "D" FRAME

CK HG0 HG1 HG2 HG3

1000

CR-CE X 20

LJA- OR LJB- 4&5

CR- X 0-4 10-14 X CE-

TO HG4-9

CR X 5-9 15-19 X CE

CR X 0-4 10-14 X CE

CR X 5-9 15-19 X CE

MCA X 12

MCA X 13

OTHER "MCC" RELAYS ONE PER MARKER

MCC X 0-9

AK TK LL0-9

LINE CHOICE 1

LL0-9

HG- X "B" "C" "D"

CR-CE X

OTHER "MCC"

MCC X 0-9

LINE CHOICE 2

LL0-9

HG- X "B" "C" "B"

CR-CE X

OTHER "MCC"

MCC X 0-9

TO OTHER LINE CHOICES

LINE CHOICE CONNECTOR

SHEET 1 AK

XHG TK

-48 W 4.5 200

LL0 LL5 LL9

LFB 2 3 CH9 5 6 LL9 2500

1B NO TEST

4B OS 537-1

LFB 2 3 CH5 5 6 LL5 2500

1T NO TEST

4B OS 537-1

LLB 2 X1 -48

3B

XT 700 (BD) X 275 -48

LFA 2 3 CH0 5 6 LL0 2500

1B NO TEST

4B OS 537-1

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TERMINATING MARKER

CHANNEL TEST

8-8 INSTALLATION

No.1 CROSSBAR

OS 516-1

5 SHEETS, SHEET 4

ISSUE	1		
DATE	8/15/57		

INCOMING GROUP 7

INCOMING LINK FRAME 14

SEC SW 9

EXT SW 9

SEC SW 0 (0 15 16 19)

EXT SW 0 (0 15 16 19)

INCOMING LINK FRAME 15

SEC SW 9

EXT SW 9

SEC SW 0 (0 15 16 19)

EXT SW 0 (0 15 16 19)

NOTE 1

INCOMING GROUP 0

INCOMING LINK FRAME 0

SEC SW 9

EXT SW 9

SEC SW 0 (0 15 16 19)

EXT SW 0 (0 15 16 19)

INCOMING LINK FRAME 1

SEC SW 9

EXT SW 9

SEC SW 0 (0 15 16 19)

EXT SW 0 (0 15 16 19)

NOTE 1

LJGF

LC15

HCA

LINE LINK 60

LINE LINK 61

HCB

LINE LINK 62

LINE LINK 63

SEC 9

SEC 0 (0 7 8 9)

NOTE 1

LC 0

HCA

LINE LINK 0

LINE LINK 1

HCB

LINE LINK 2

LINE LINK 3

SEC 9

SEC 0 (0 7 8 9)

NOTE 1

NOTE 1 VERTICALS 16 THRU 19 ON INCOMING FRAMES AND VERTICALS 8 & 9 ON LINE LINK FRAME CROSS CONNECT PER ED 25714-01.

NOTE 2 SEC. SWITCHES 1 THRU 9 CROSS CONNECT SIMILARLY TO SEC. SWITCH 0.

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TERMINATING MARKER
CHANNEL TEST
8-8 INSTALLATION
OS 516-1

NO. 1 CROSSBAR

36-Y-4155

ISSUE	DATE
1	3/19/59

DISTRICT JUNCTOR

TRUNK

INCOMING TRUNK

TO SUBSCRIBERS LINE THRU LINK SWITCHES

TO SUBSCRIBERS LINE THRU LINK SWITCHES

TERMINATING MARKER

OFFICE INT.

OFFICE INT.

RINGING CONTROL				
RING			RC	
TIP		RV	RC	
BUSY	TC	RV		
OFL	TC	RV	RC	
FREE	TC		RC	
FOUR PARTY R1			RC	
	T2	RV	RC	
	R3		RC	RP
	T4	RV	RC	RP

TERM. MARKER CKT. SD-25283 ISS. 470

TERMINATING MARKER
RINGING CONTROL
OVERALL SUPERVISION

NO. 1 CROSSBAR | OS 517-1

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38-Y-4156

ISSUE	DATE	BY
1	1/58	R

INCOMING TRK.

F

TRUNK 25

A 10

D

COMMON TO MAX. OF 16 TRKS

PRIMARY SW 2

HOR. 1 & 4

VERT. 0L

SECONDARY SW 0

HOR. 2

VERT. 1L

P(0L) 1250 H.D. -48

S(1L) 1570 H.D. -48

INCOMING LINK FRAME 4

LINE LINK FRAME 4

HOR 5

VERT 4

SECONDARY SW 0

TO L.L. 5

PRIMARY SW 5

HOR 0

VERT 7

(B) 2500

HG 5

TO OTHER HG RLYS

SMBD JACK

P (7) 1570 H.D. -48

TO NUMBER GROUP CONN.

S (4) 1570 H.D. -48

SH

HM 0

LJA 4

TO OTHER LJ RELAYS OF SAME LINE CH.

MCC

TO OTHER MCC RELAYS OF SAME L.C. CONN.

TO OTHER L.C. CONN

CR & CE

TO OTHER CR & CE RELAYS OF SAME LINE CH. CONN.

LINE CHOICE CONNECTOR

LC

TO OTHER LC RELAYS ON SAME FR.

MC

TO OTHER MC RELAYS ON SAME FR.

TO OTHER INC. LK. FRS.

SIL

OL

EH0

LJ 0

NP 0

CH 0

LL 0

LFA

HMT1

HF4

NC3

CON1

(LL)

GC1

GC

BC1

SL1

BA

BC

LIL

MULT TO R1L

MULT TO CH 1-9

NTT

PU1

CNL1

TR

TTIB

LK

LLGA

LLGB

LLGC

LLGD

EH

OH

GC1

X54

GS

NC4

GJ

6J

SL

IK

MKR TEST

BA S-1700 P-260 T-675 -48

RLT

BC P280 T-675 S1700

TERMINATING MARKER
CHECK AND OPERATION OF HOLD MAGNETS
OS 518-1

NO. 1 CROSSBAR

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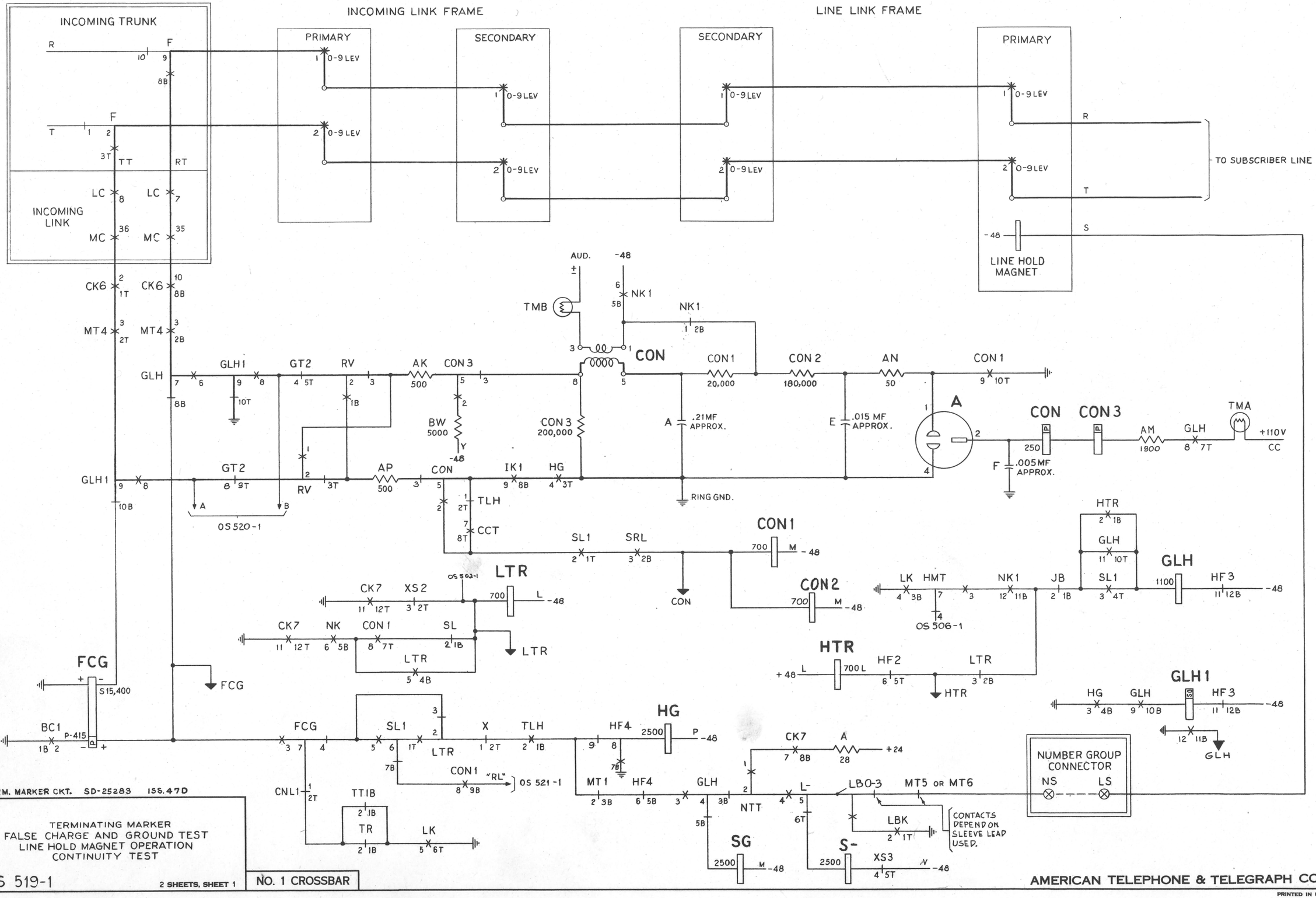
INCOMING TRUNK
INCOMING LINK
INCOMING LINK FRAME
PRIMARY
SECONDARY
SECONDARY
LINE LINK FRAME
PRIMARY
0-9 LEV
TO SUBSCRIBER LINE
LINE HOLD MAGNET
-48
AUD.
TMB
NK1
CON
CON1
CON2
AN
A
E .015 MF APPROX.
A .21MF APPROX.
F .005MF APPROX.
CON
CON3
TMA
+110V
CC
AM
GLH
GLH1
GT2
RV
AK
BW
CON3
AP
IK1
HG
TLH
CCT
RING GND.
OS 520-1
LTR
OS 502-1
CK7
XS2
NK
SL
SL1
SRL
HTR
HF2
HF3
LK
HMT
JB
OS 506-1
FCG
S15,400
BC1
P-415
HF4
X
CNL1
TTIB
TR
LK
MT1
NTT
LBO-3
MT5 OR MT6
LBK
CONTACTS DEPEND ON SLEEVE LEAD USED.
SG
S-
XS3
NUMBER GROUP CONNECTOR
NS
LS
CK6
MT4
GLH
TT
RT
LC
MC
TMB
TERM. MARKER CKT. SD-25283 ISS.47D
TERMINATING MARKER
FALSE CHARGE AND GROUND TEST
LINE HOLD MAGNET OPERATION
CONTINUITY TEST
OS 519-1
2 SHEETS, SHEET 1
NO. 1 CROSSBAR
AMERICAN TELEPHONE & TELEGRAPH CO.
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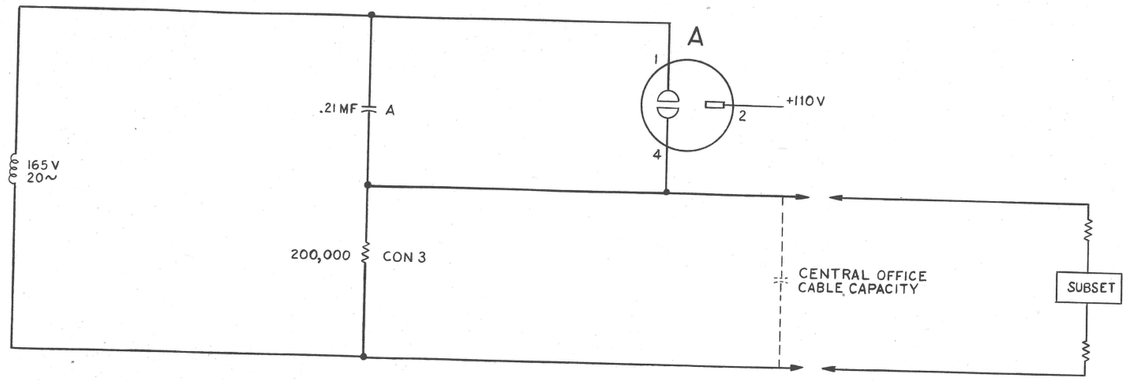
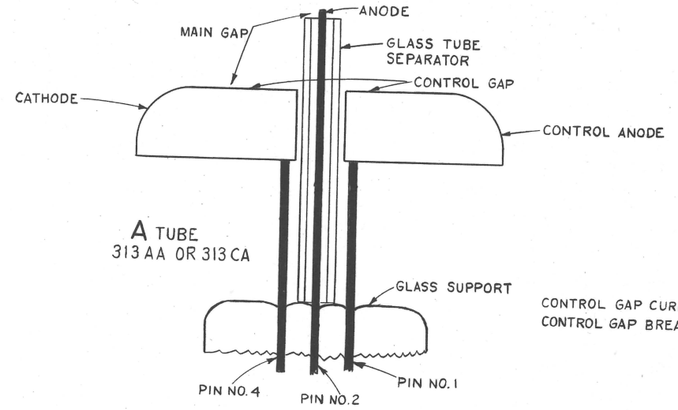
2 SHEETS, SHEET 2

ISSUE	DATE
1	2/5/54
OR	

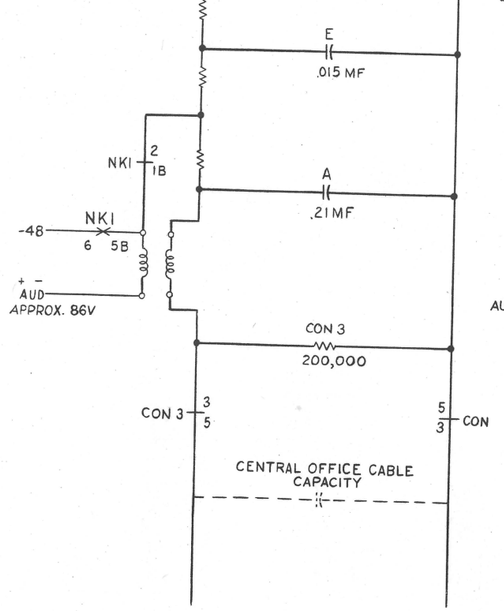
CONTINUITY TEST
EQUIVALENT CIRCUIT



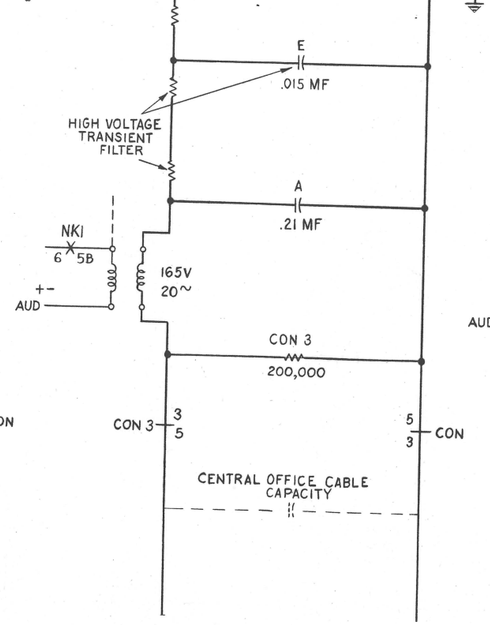


CONTROL GAP CURRENT FLOW AT 60V
CONTROL GAP BREAKDOWN AT 70V

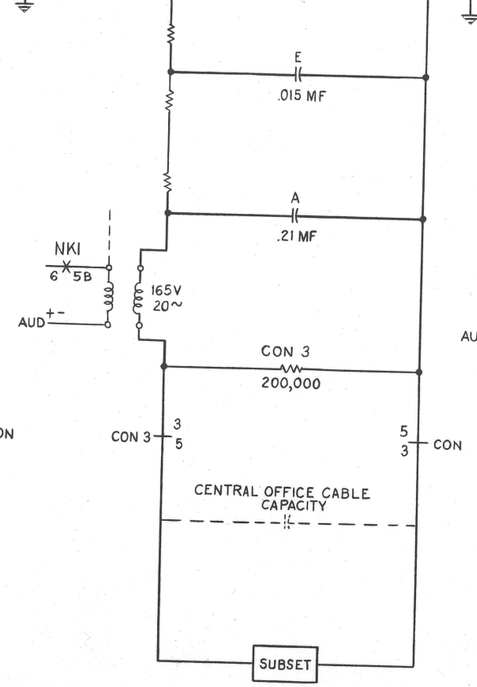
KEEP ALIVE CIRCUIT
MARKER NORMAL



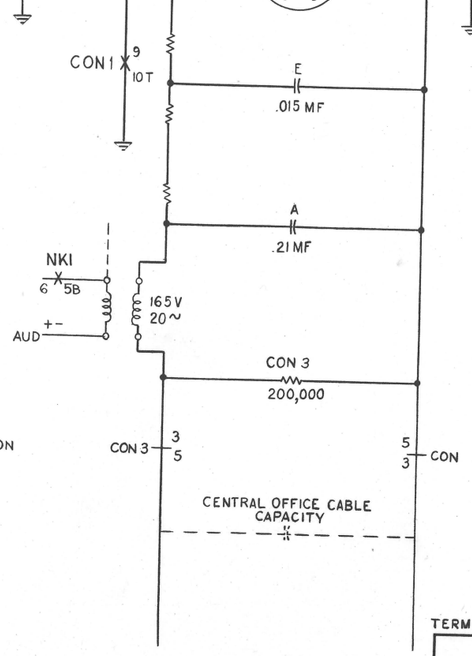
LINE HOLD
MAGNET NOT OPERATED



LINE HOLD
MAGNET OPERATED



CON1 RELAY OPERATED



TERM. MARKER CKT. SD-25283 ISS. 47D

TERMINATING MARKER

FALSE CHARGE & GROUND TEST
LINE HOLD MAGNET OPERATION
CONTINUITY TEST

NO. 1 CROSSBAR

OS 519-1

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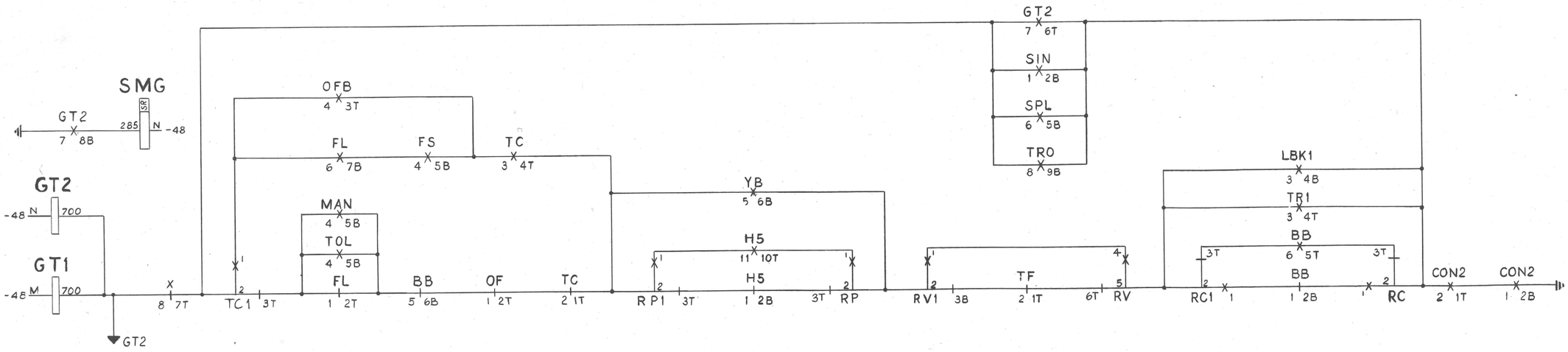

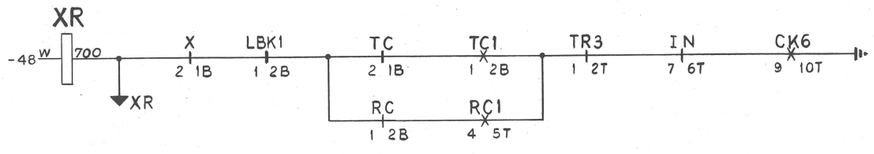

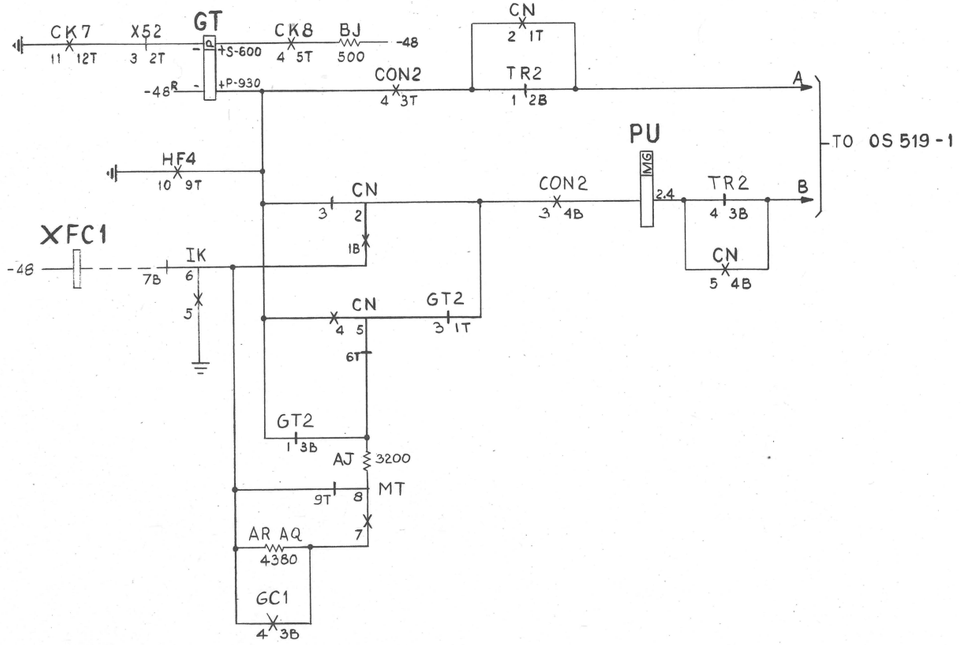

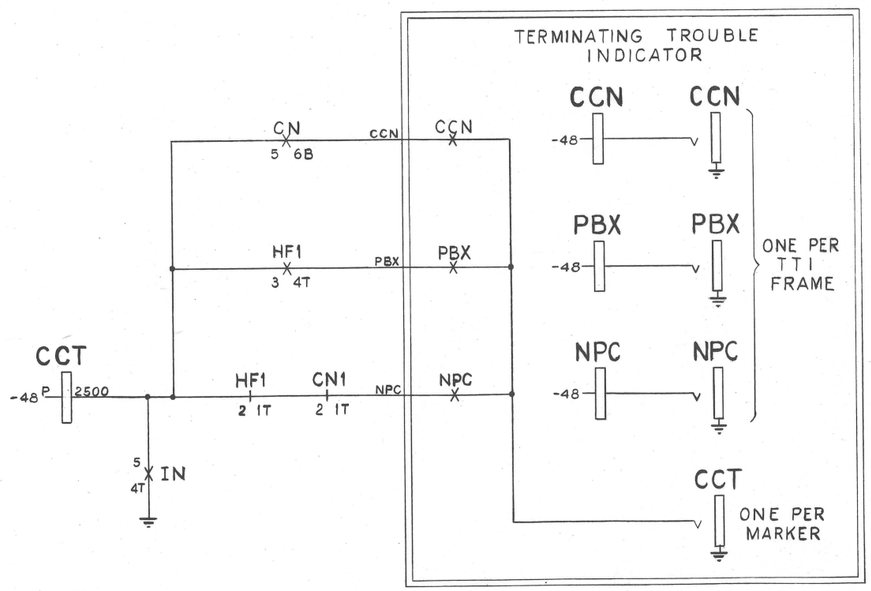

TERMINATING MARKER CKT. SD-25283 ISS. 47D

TERMINATING MARKER
RINGING CONTROL CHECK
GROUND TEST

OS520-1 2 SHEETS, SHEET 1 NO. 1 CROSSBAR

ISSUE 1 FC
DATE 2/17/54

2 SHEETS, SHEET 1

38-Y-4158

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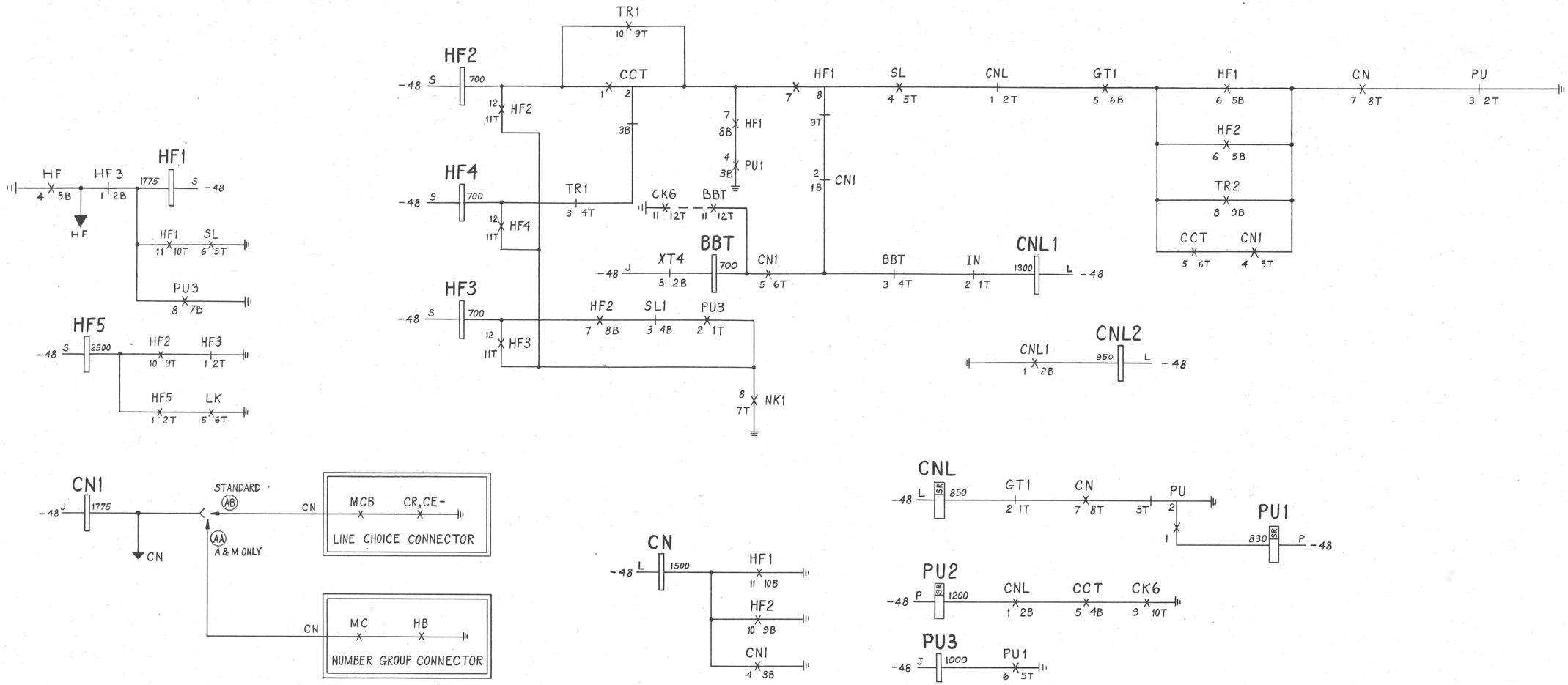

TERMINATING MARKER CKT. SD-25283 ISS. 47 D

TERMINATING MARKER
RINGING CONTROL CHECK
GROUND TEST

38-Y-4133

ISSUE	DATE
1	8/13/54

INCOMING TRUNK

INCOMING LINK FRAME

PRIMARY SWITCH

SECONDARY SWITCH

LINE LINK FRAME

SECONDARY SWITCH

PRIMARY SWITCH

D 1 2B

A 10

F 3 1 2B

F- -48

SD 25295

SLEEVE LEAD

(P) GTOH -48

(S) GTOH -48

LJ

DJ

SH 1 2

(S) HOTH -48

(LH) GTH -48

NS HOR LDF

LDF VERT LS NS

SD 25457

SD 25553

LC- LC-

MC- MC-

SL 950 N -48

SL

SL 3 4B

SL1 200 N -48

TB NUMBER GROUP

MCB CONNECTOR

MT5 OR MT6

OS 509-1 4 7 GT 3

TIMING 2 OS 519-1 1

TM7 1 3T 2 TTIB 3B

TR 8 7B TRO 4 3B XRL 3 4T

XRL -48 W P-850 XRL

SDT 3 4T MT 2 1B NTT 1 2T 6B 5 GT2 4

CK7 2 1B NTR 3 2B NTT 7 8T OF 4 3T

SL 1 9 8B

OS 519-1 3 1T 2 LTR

LB 0-3

L- 5 6 4T

NTT 1 2 3B

GLH 4 5 3B

HF4 5 6B

MT1 3 2B

HG 7 8 2500 P -48

OS 519-1

RL -48

TERM. SENDER

S TM

TERM. MKR. CONN.

LLB 8 9 7T

X 4 3T XR 2 3B TRB 2 1B CON1 9 8B SL1 7 6 5B

X 1 2T TLH 2 1B HF4 9B 8

RL

CK6 12 11B

OS 519-1

TERMINATING MARKER

REGULAR RELEASE

NO. 1 CROSSBAR OS 521-1

38-Y-4194

ISSUE	1	CK
DATE	7/55	

OS 510-1 SHEET 1

PG
-48 L 750
PG

JUMP HUNT
1 2B JC19
NC9 8 9 NC16 7T 10 9T
NUMBER CHECKING CIRCUIT (SPECIAL MARKER ONLY)
S19 3 48 HT19 3T
L19
A OS 510-1
TO 511-318

JUMP HUNT
1 2B JC10
NC8 2 3 NC16 18 2 1B
NUMBER CHECKING CIRCUIT (SPECIAL MARKER ONLY)
S10 3 48 HT10 3T
L10
A OS 510-1
TO 51-59

JUMP HUNT
1 2B JC0
NC6 2 3 NC15 18 2 1B
NUMBER CHECKING CIRCUIT (SPECIAL MARKER ONLY)
S0 3 48 HT0 3T
L0
A OS 510-1

1B 2 NH 3 NT 9 10 8T AL 2 3 1B
BB 2500 N -48
BB
BB 3 4T

NTT
-48 AN 1000 NTR 5 48
NTT
ALB 2 1 3T
ALA
-48 F 700

BBA
-48 N 2500 LKO 1 2B

NTH
-48 AJ B 850 NCT 2 1T NT 5 6B
NT 3 4B
TEX 5 6T
CK6 9 10T
LLB 6 5T

XOB
-48 W 850 IK 1 2B RO 7 6 5B OFT 7 2 1T
XOB 4 3B
CK5 7 6B CK3 2 1B
CK6 10 9T IK1 4 3T CNL2 4 3T
JB 3 4T NC5 7 8B
OF 700 N -48
OF
OF 1 2 OF1 3T RF 5 4T TF 7 6T TMBN 6 5 4T TMBL 6 5 4T TRO 7 6 5T B 7B OF
CK6 9 10T
K1 1 2B CK1 CK4 CK6 5 4T 11 12T
OS 535-1

RO
700 C -48
RO

TMBL 360
TMBN 350

TRO
-48 P 2500 TRO1 1 2 3T TM6 1 2B
DL
-48 F 1300 DL1 1 2T
TML1 2 1T TML2 1 2T
X 12 11T
CK3 2 1T
HF4 7 8T
CK2 2 1T
CK9 5 4B TM1 4 5B CK4 1 2B CK6 11 12T
CK1 2 1T
TRO1
-48 D 2500

YBA
AH 700 BB 10 11B CK6 9 10T
YB
L 1500 YBA 3 4T

OS 524-1
OFB
BB 7 8T
OFB 700 L -48
OF 10 9T
1 2B BLK

OF1 2 1B
TBK 6 5T LBK 5 4T PGT 5 6 2500 N -48
4T
AQ OPTION

MARKER CONN. TM S RO
MKR CONN. TM S RO
CK3
TERM SENDER
"B" SENDER
RO

TMB START BATTERY
OS 507-1
TMB
-48
226
TMB
LINE CHOICE CONN.
ALM
-48
TMB

TMB START BATTERY
OS 505-1
TMB
-48
226
TMB
NUMBER GROUP CONN.
ALM
-48
TMB

TRO
MISC. CKT. T.T.I.

-48 AJ A OS 511-1 SH 1
OFT 400

MCC OFT NF TB MCB
NUMBER GROUP CONN.

L-

TERM. MARKER CKT. SD 25283 155.47D

TERMINATING MARKER
BUSY LINE - OVERFLOW

OS 522-1

NO. 1 CROSSBAR

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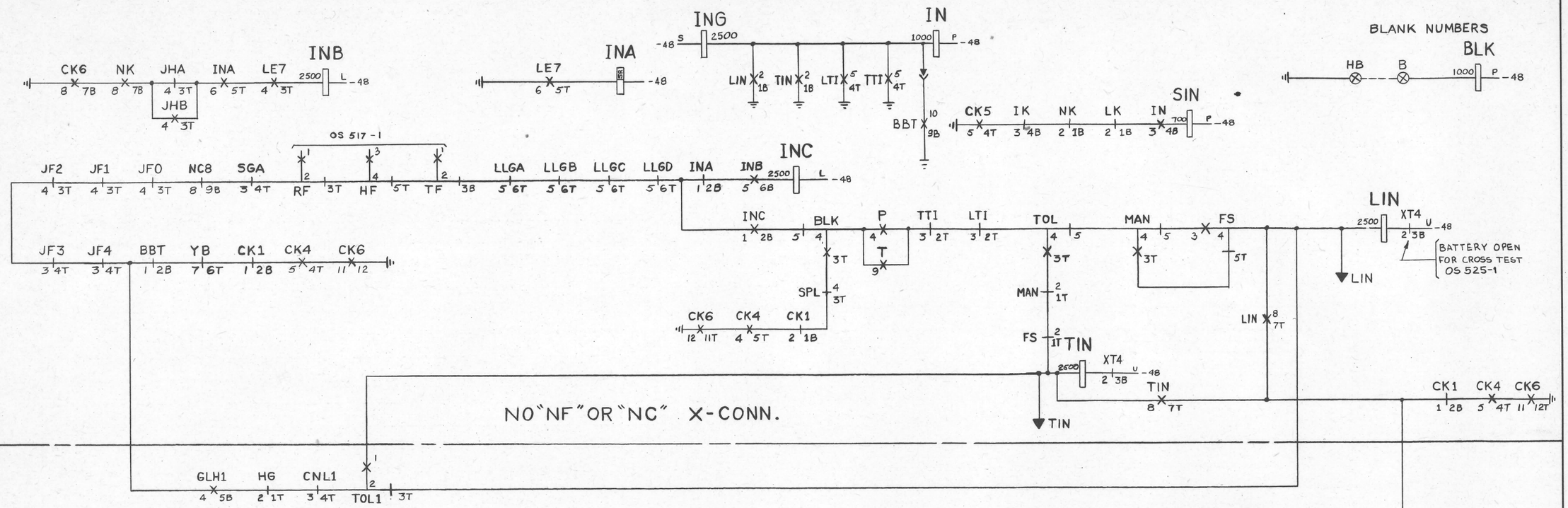

TERMINATING MARKER
INTERCEPT
LOCAL, TOLL, TROUBLE

OS 523-1

2 SHEETS, SHEET 1

NO. 1 CROSSBAR

ISSUE 1 | CR
DATE 2/9/54

2 SHEETS, SHEET 1

38-Y-4215

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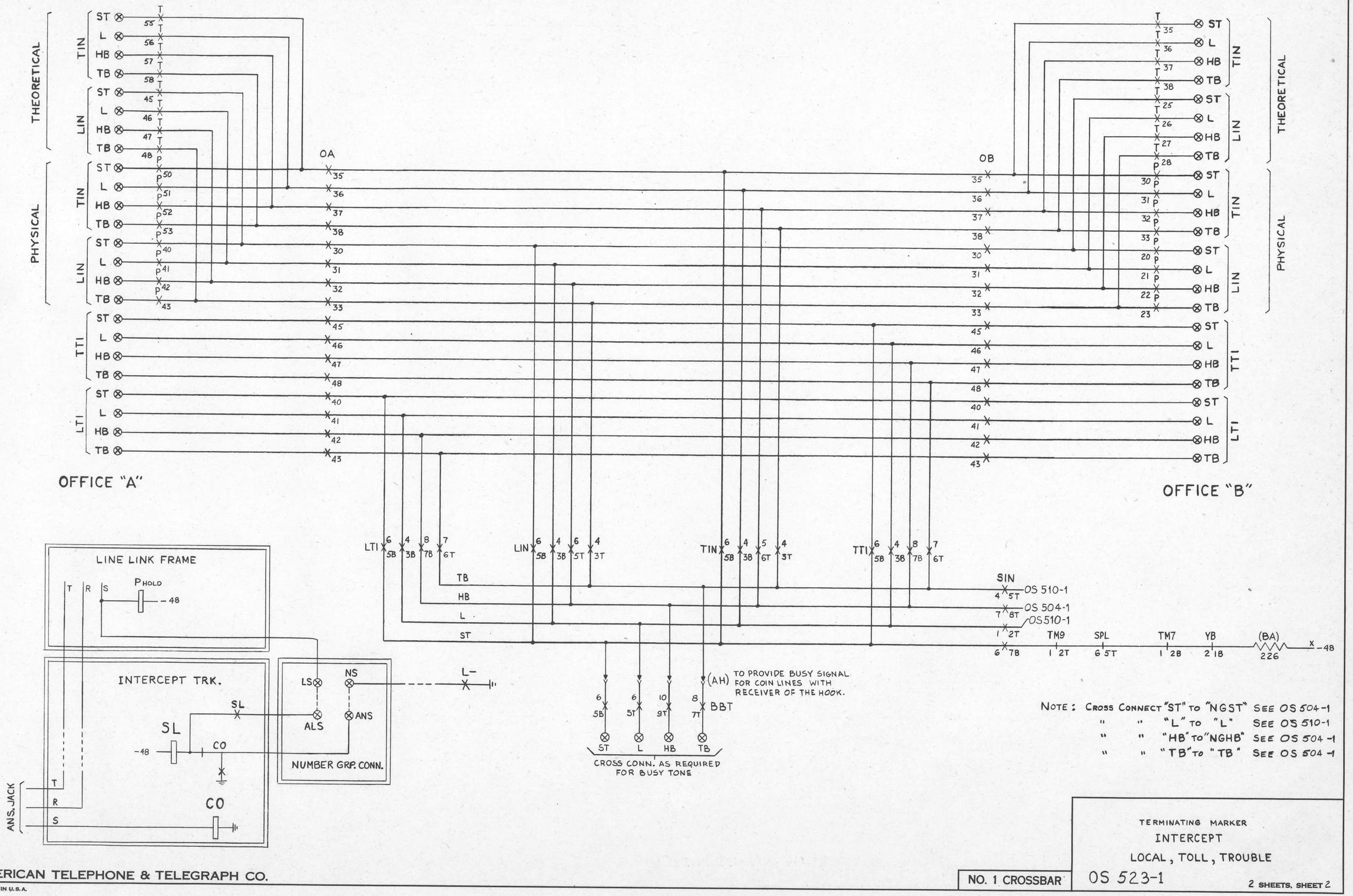
38-Y-4215

2 SHEETS, SHEET 2

ISSUE	1	C/R				
DATE	2/5/54					



NOTE: CROSS CONNECT "ST" TO "NGST" SEE OS 504-1
" " "L" TO "L" SEE OS 510-1
" " "HB" TO "NGHB" SEE OS 504-1
" " "TB" TO "TB" SEE OS 504-1

TERMINATING MARKER
INTERCEPT
LOCAL, TOLL, TROUBLE
OS 523-1
2 SHEETS, SHEET 2

NO. 1 CROSSBAR

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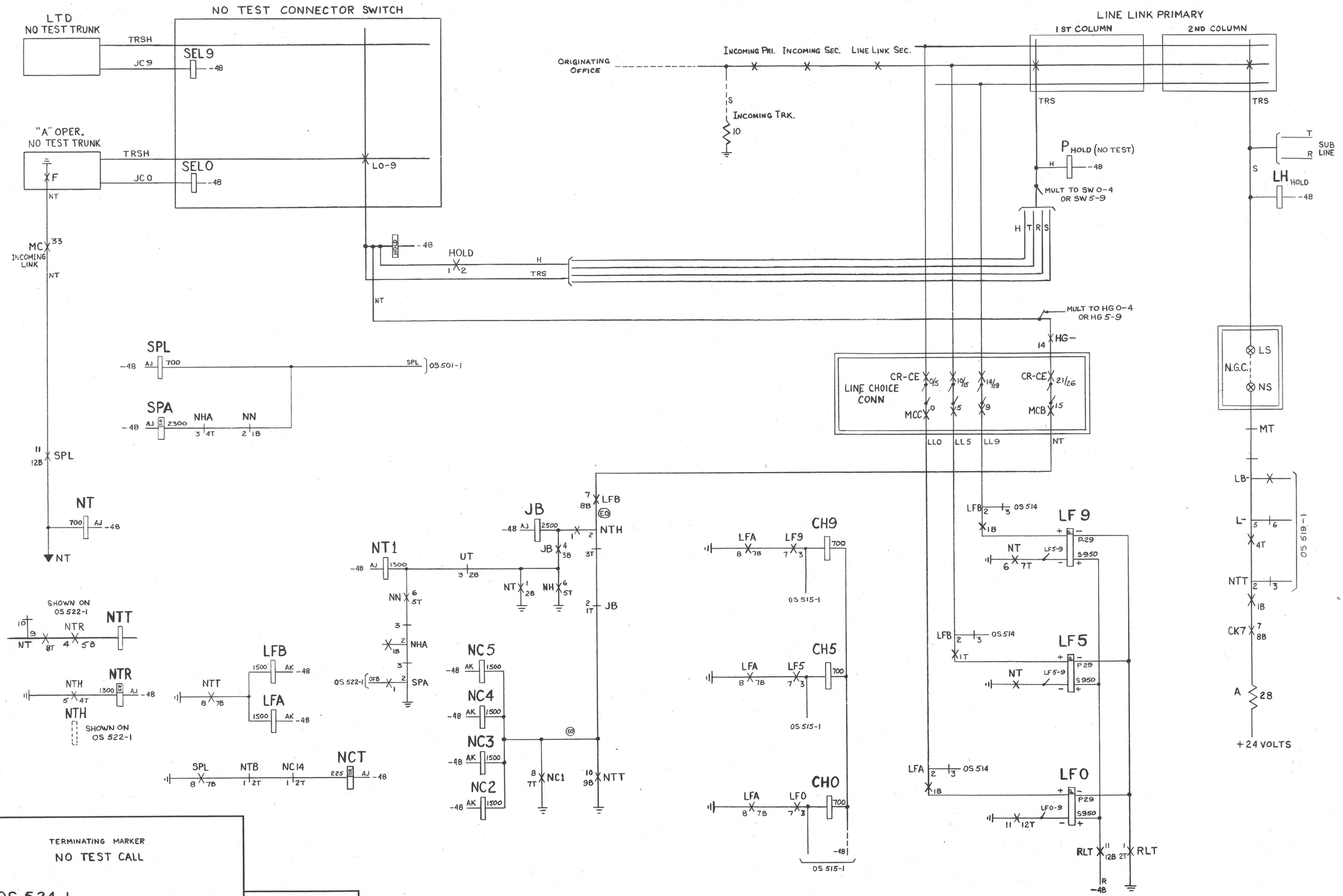
LTD
NO TEST TRUNK
TRSH
JC 9
SEL 9
-48
NO TEST CONNECTOR SWITCH
"A" OPER.
NO TEST TRUNK
TRSH
JC 0
SEL 0
-48
LO-9
F
NT
MC 33
INCOMING LINK
NT
HOLD
-48
HOLD
1 2
H
TRS
NT
LINE LINK PRIMARY
1 ST COLUMN
2 ND COLUMN
ORIGINATING OFFICE
INCOMING PRI.
INCOMING SEC.
LINE LINK SEC.
S
INCOMING TRK.
10
TRS
TRS
P HOLD (NO TEST)
H
-48
MULT TO SW 0-4 OR SW 5-9
H T R S
T
R
SUB LINE
S
LH HOLD
-48
MULT TO HG 0-4 OR HG 5-9
14 HG-
LINE CHOICE CONN
CR-CE 0/5
10/15
14/19
CR-CE 21/26
MCC 0
5
9
MCB 15
LL0
LL5
LL9
NT
LS
N.G.C.
NS
MT
SPL
-48 AJ 700
SPL
OS 501-1
SPA
-48 AJ SRR 2300
NHA 3 4T
NN 2 1B
11 12B SPL
NT
700 AJ -48
NT
JB
-48 AJ 2500
7 8B LFB
EO
NTH
JB 4 3B
3T
2 1T JB
NT1
-48 AJ 1300
UT 3 2B
NT 1 2B
NH 6 5T
NN 6 5T
3
2 1B NHA
3
OFB 2 1 SPA
OS 522-1
SHOWN ON OS 522-1
NTT
10 9 NT
NTR 4 5B 8T
NTR
NTH 5 4T 1300 SRR AJ -48
NTH
SHOWN ON OS 522-1
LFB
1500 AK -48
NTT 8 7B
LFA
1500 AK -48
SPL 8 7B
NTB 1 2T
NC14 1 2T
NCT 225 SRR AJ -48
NC5
-48 AK 1500
NC4
-48 AK 1500
NC3
-48 AK 1500
NC2
-48 AK 1500
EO
8 7T NC1
10 9B NTT
CH9
LFA 8 7B
LF9 7 3
700
OS 515-1
CH5
LFA 8 7B
LF5 7 3
700
OS 515-1
CH0
LFA 8 7B
LF0 7 3
700
-48
OS 515-1
LFB 2 3 OS 514
1B
LF 9
P 29
S 950
NT 6 7T
LF5-9
LFB 2 3 OS 514
1T
LF 5
P 29
S 950
NT
LF5-9
LFA 2 3 OS 514
1B
LF 0
P 29
S 950
LF0-9
11 12T
RLT 11 12B 1 2T RLT
R
-48
LB
L
5 6
4T
NTT 2 3
1B
CK7 7 8B
A 28
+24 VOLTS
OS 519-1
ISSUE 1 C8R
DATE 3/17/54
2 SHEETS, SHEET 1
38-Y-4220
TERMINATING MARKER
NO TEST CALL
OS 524-1
2 SHEETS, SHEET 1
NO.1 CROSSBAR
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38-Y-4220

2 SHEETS, SHEET 2

ISSUE	1	C&R
DATE	2/17/54	

CONNECTOR SWITCH FIRST LINE CHOICE

CONNECTOR SWITCH INTERMEDIATE LINE CHOICE

CONNECTOR SWITCH LAST LINE CHOICE

TO NO TEST TRUNKS

9

5

0

"B" FRAME

SPARE

"A" FRAME "B" FRAME "C" FRAME "D" FRAME SPARE

"A" FRAME "B" FRAME "C" FRAME "D" FRAME SPARE

MULT TO OTHER SWITCHES IF MORE THAN 10 TRUNKS ARE REQUIRED

"A" FRAME

FIRST COL.

SW 9

0-VERT

(P) HLD

H -48

SW 6 TO 8

SW 5

0-VERT.

(P) HLD

H -48

SW 4

0-VERT.

(P) HLD

H -48

SW 1 TO 3

SW 0

0-VERT.

(P) HLD

H -48

"C" FRAME

FIRST COL.

SW 9

0-VERT.

(P) HLD

H -48

SW 6 TO 8

SW 5

0-VERT

(P) HLD

H -48

SW 4

0-VERT

(P) HLD

H -48

SW 1 TO 3

SW 0

0-VERT

(P) HLD

H -48

"D" FRAME

FIRST COL.

SW 9

0-VERT

(P) HLP

H -48

SW 6 TO 8

SW 5

0-VERT

(P) HLD

H -48

SW 4

0-VERT

(P) HLD

H -48

SW 1 TO 3

SW 0

0-VERT

(P) HLD

H -48

SEQUENCE CHART

GT

F(IT)

F1(IT) F2(IT)

NT — SEL NO TEST CONN.

NTH NT1 LE

NTR

COND TIMING

TLT

NTT

LFA LFB NC2 NC3 NC4 NC5

S-

L-

CONTINUE AS IN REGULAR CALL TO (LOG)

LOG

CONTINUE AS IN REGULAR CALL

HG(LL)

HG (LL)

JB

OF

IF NO TEST CONNECTOR IS BUSY

LF $\frac{1}{0-9}$

CH $\frac{1}{0-9}$

TE

PSEL (LL) SSEL(LL)

SR

NTH

RL(TS)

HLD NO TEST CONN

LH HLD NO TEST VERTICAL LINE LINK FRAME 0-4 OR 5-9

REGULAR RELEASE

TERMINATING MARKER

NO TEST CALL

NO. 1 CROSSBAR

OS 524-1

2 SHEETS, SHEET 2

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38-Y-4238

ISSUE		
DATE		C&R
9/25/57		

NUMBER GROUP CONN.

NF 0 — NF 19

L0 — LI9

LE1 — LE2

HT0 — HT19

SHOWN ON OS 511-1

XT2 2 X 1 — TR3 2 1T — XS — -48

3B

-48

LINE CHOICE CONN.

LL0 — LL9 — LJ0 — LJ9

LFA — LFB — JPN — JPN

CH0 — CH9 — CH0 — CH9

LL0 — LL9 — AB0 — AB9

INCOMING LINK & CONN.

0L — 9L — 0R — 9R

LIL — LIL — RIL — RIL

AB0 — AB9

LINE CHOICE CONN.

OH0 — OH9 — EH0 — EH9

OH — OH — EH — EH

SHOWN ON OS 518-1

1 2B XT3 — 9 10T XT3

LGA/C — EH — -48

LGB/D — OH — -48

NC4

2 3B LLB

SHOWN ON OS 514-1

XT 700

-48 X 275 (BD) — 275 (BD) — XT2 6 7B — XT3 12 11B

-24 VOLTS

JPN -48 — XT2 4 5B — XT4 2500 U -48

RIL -48 — XT2 10 11B

LIL -48 — XT2 8 9B — XT3 12 11T

OS 503-1

3 — 2 — 1 XT2 — LE1 -48

LE2 -48

LGA XT2 10 11T -48

LGB XT2 8 9T -48

LGC XT2 6 7T -48

LGD XT2 4 5 -48

XT2 -48 — XT3 -48 — LLB 2 1T — CK5 5 4B

NOTE 1

MISC. CIRCUIT T.T.I. — XT

T.M.C

TM 29 — DB

DB 2 3 — 1T

CBR -48

CBS

CBT

SHOWN ON OS 501-1

XRL 5 6T — TR 4 5T — TRO 1 2T — PU3 6 5T — HF3 10 9T — TR01 2 1B TR01

TRO JACK — MISC. CKT. TTI

TERM. TBL. IND.

TIMING CKT. 28-58 SEC IN CASE OF FALSE GND ON DB LEAD

DB -48 — 2500 — DJ — MISC. CKT. TTI — DB

NOTE 1: CROSS TESTS FUNCTION WHILE MARKER IS NORMAL AND IS INOPERATIVE FROM THE OPERATION OF CK5 UNTIL THE LLB IS RELEASED

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NO 1 CROSSBAR

TERMINATING MARKER

CROSS TEST

LINK AND JUNCTOR HOLD MAGNETS

OS 525-1

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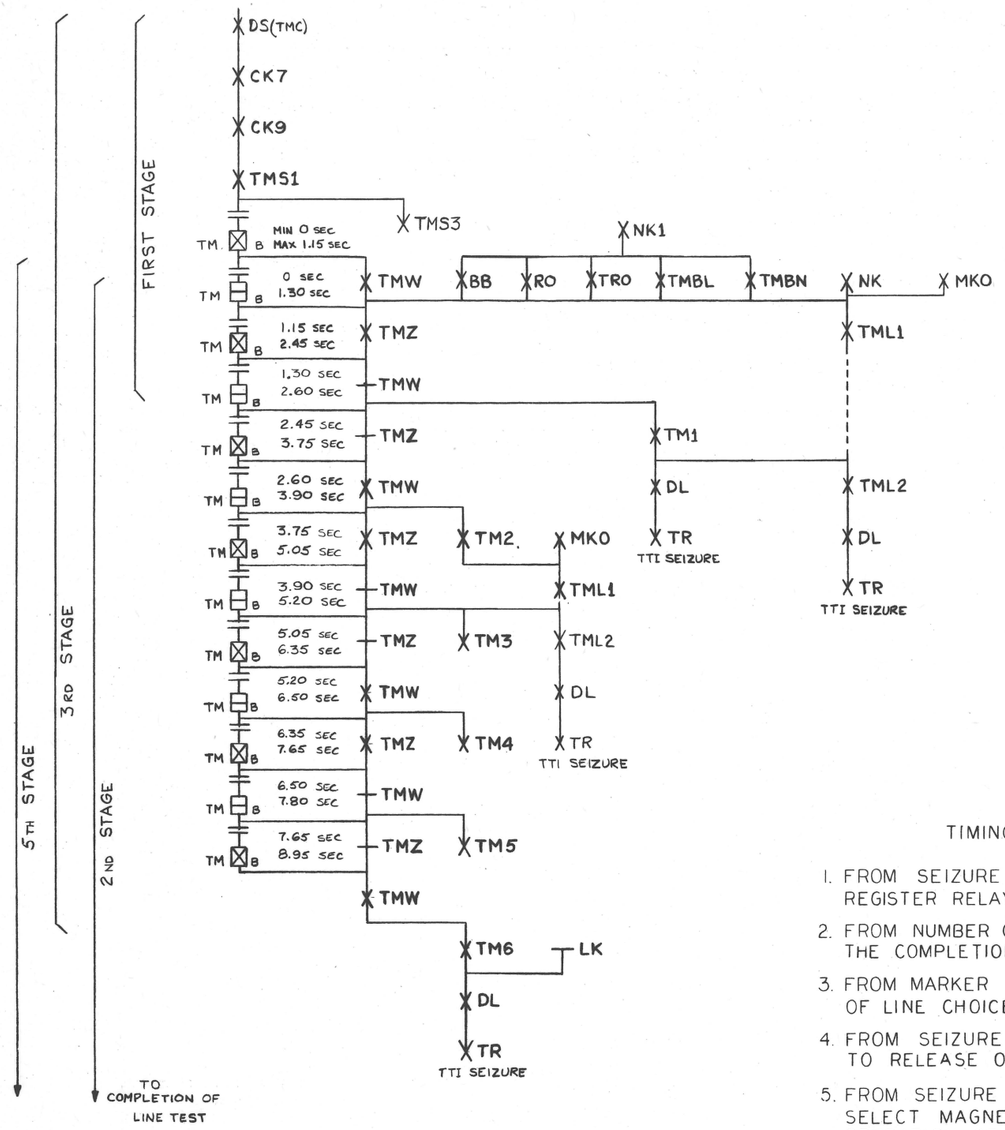

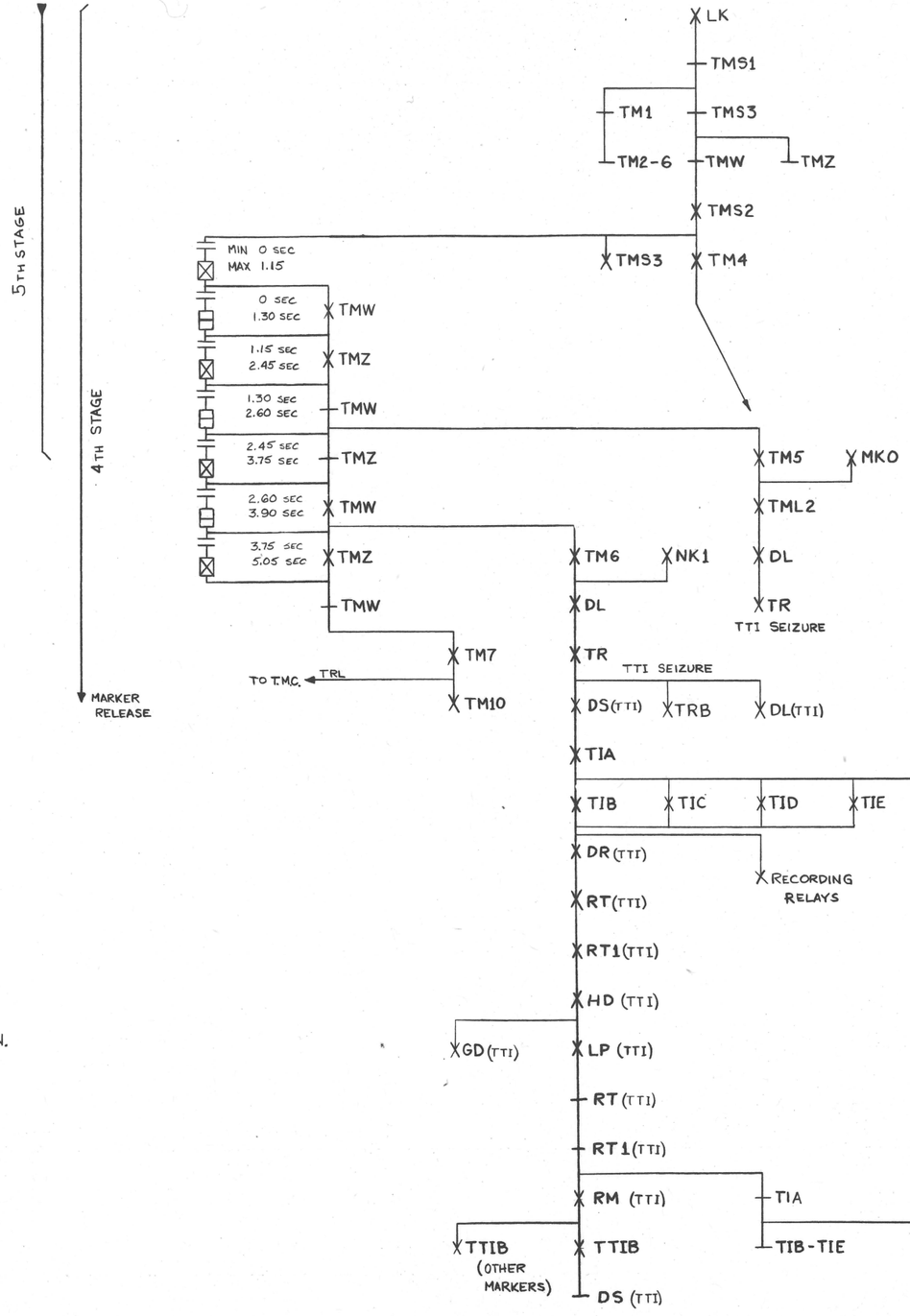

TIMING STAGES

1. FROM SEIZURE TO COMPLETION OF REGISTER RELAY CHECK
2. FROM NUMBER GROUP SEIZURE TO THE COMPLETION OF LINE TEST
3. FROM MARKER SEIZURE TO SEIZURE OF LINE CHOICE CONNECTOR
4. FROM SEIZURE OF LINE CHOICE CONN. TO RELEASE OF MARKER
5. FROM SEIZURE OF THE INCOMING SELECT MAGNET LOCKOUT TO THE OPERATION OF THE HOLD MAGNETS
6. TO COVER SEIZURE AND RELEASE OF THE T.T.I. FOLLOWING TIME-OUT FROM ANY STAGE

ISSUE	1	CBR
DATE	12/16/59	

TERMINATING MARKER
MISC. CROSS DETECTION
TTI SEIZURE

OS 526-1

2 SHEETS, SHEET 1

NO. 1 CROSSBAR

2 SHEETS, SHEET 1

38-Y-4236

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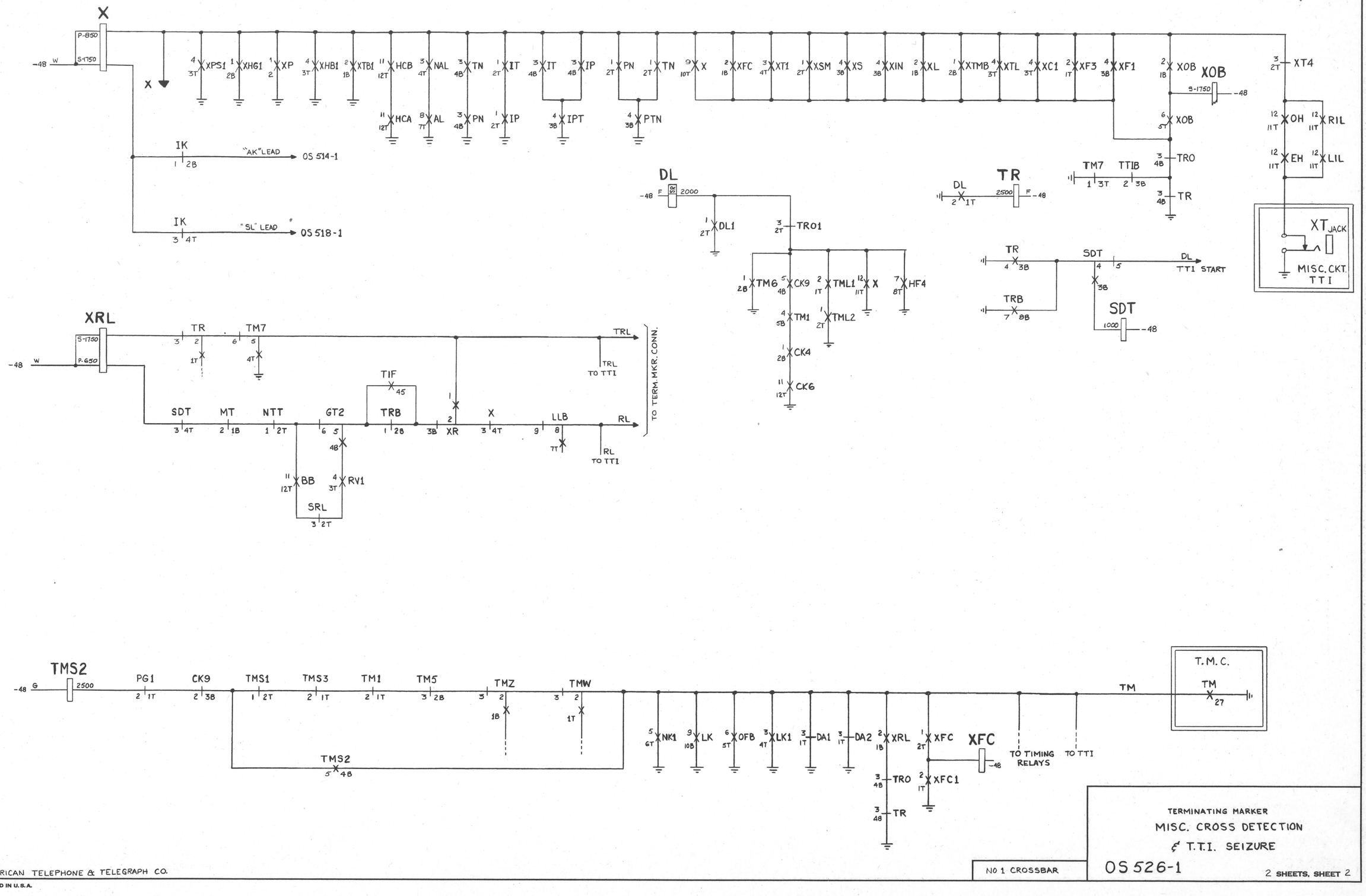
38-Y-4236 2 SHEETS, SHEET 2

ISSUE	DATE
1	2/26/57



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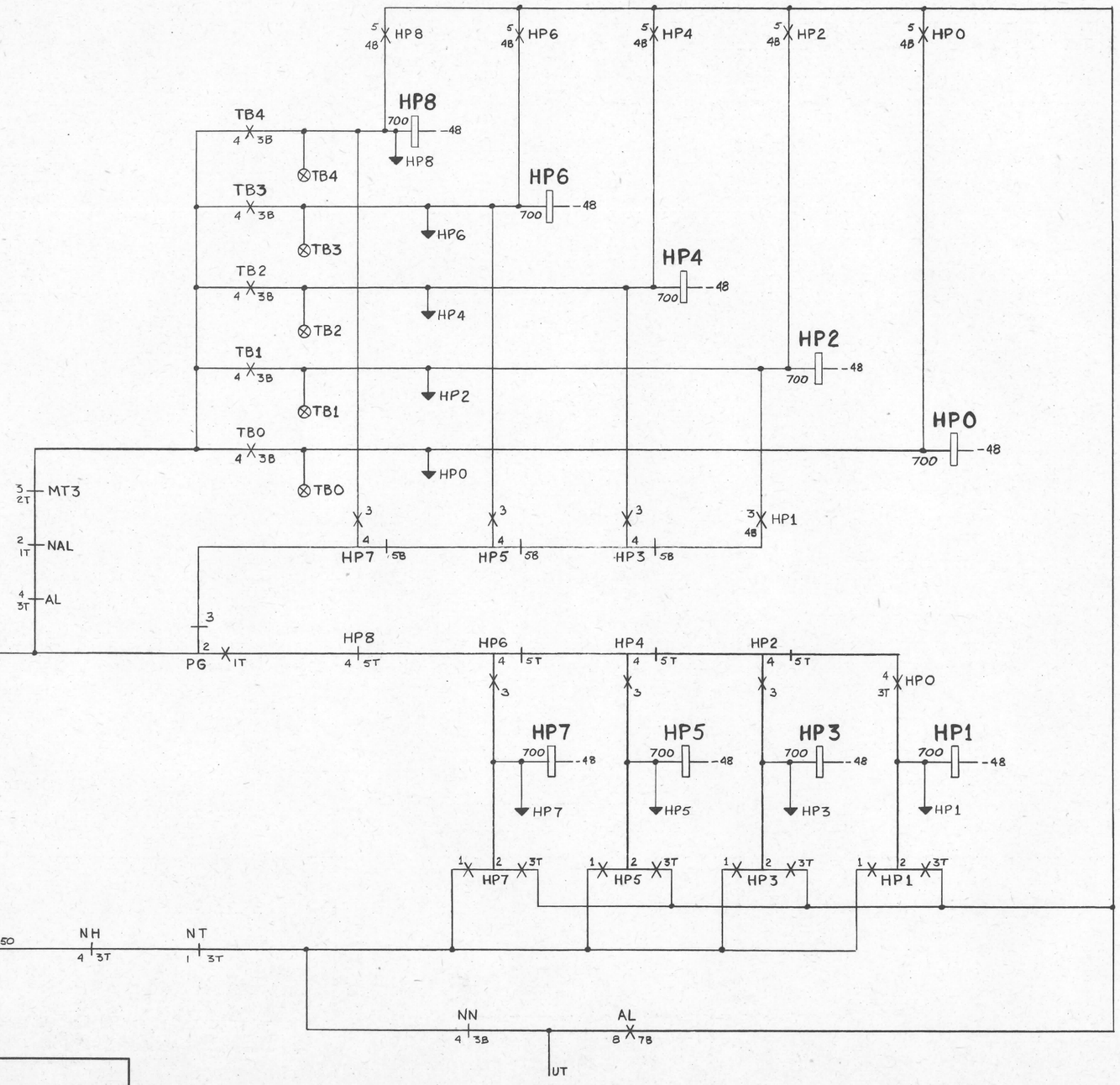
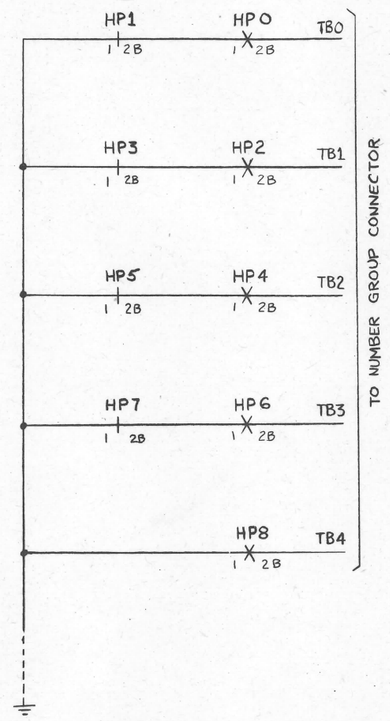
NO 1 CROSSBAR

TERMINATING MARKER
MISC. CROSS DETECTION
& T.T.I. SEIZURE

OS 526-1

2 SHEETS, SHEET 2





TERMINATING MARKER

TERMINAL HUNTING & SPLIT HUNDREDS

OS 527-1

5 SHEETS, SHEET 1

NO. 1 CROSSBAR

ISSUE	1	C6R
DATE	8/16/57	

5 SHEETS, SHEET 1

38-Y-4235

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38-Y-4235 5SHEETS, SHEET 2

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1	2/6/59

TERM MARKER

OS ILLUSTRATES:

PBX ALLOTTER
DIRECTORY NO. 1900 - 1939

NON-CONSECUTIVE END OF BLOCK
END OF BLOCK HUNTING
FROM 1999 - 1940

FREE LINES
FREE LINES IN 20 BLOCK
1960 - 1979

SHO

FH1'

TB4 SH-0
34/39
4/9
14/19
24/29

TB3
33/38
3/8
13/18
23/27

TB2
32/37
2/7
12/17
22/26

TB1
31/36
1/6
13/16
21/25

TBO
30/35
0/5
10/15
20/25

SH-ST4 SH-HB4 SH-TB4
SH-ST3 SH-HB3 SH-TB3
SH-ST2 SH-HB2 SH-TB2
SH-ST1 SH-HB1 SH-TB1
SH-STO SH-HBO SH-TBO

TBW XTB

HP8 — TO TB RLY FOR 1960 - 1979
HP6 — TO TB RLY FOR 1940 - 1959
HP4 — TO TB RLY FOR 1980 - 1999
HP2 — TO TB RLY FOR 1920 - 1939
HP0 — TO TB RLY FOR 1900 - 1919

AL-1 ALI-TB ALI-HB ALI-ST
AL-2 ALI-TB ALI-HB ALI-ST
CROSS CONN FOR OTHER NO. GRP.

NG-HB4 TO HB3 RLY IN CONN
NG-ST1 TO M.P. RLY FOR THIS MKR IN NO GRP CONN 1500-1999

NFL
AL
NAL
AF
NAF
UT
FL

TERMINATING MARKER

TERMINAL HUNTING AND SPLIT HUNDREDS

NO. 1 CROSSBAR

OS 527-1

5 SHEETS, SHEET 2

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38-Y-4235 5 SHEETS, SHEETS

ISSUE	DATE
1 R/S	3/9/67

NGC 1

NGC 2

BR 1 0800-1599

BR 2 1600-2399

TB0 HB2 HB1 MP- MCA- XTB TBW HP1 HP0 NK TMBN TM4 ALA ALZ CK7 ALB ALW AL2 AL1 BM SPL NN ST1 ST2 ST AL1 AL2 ALC-STO ST00 SH1 TB4 HPE FL NFL ALA XS CK6 ALB HB HB1 ALC-HBO HB00 TB TB1 ALC-TBO TB00 MT3 IN YBA FH1' AL00 NAL AL NFL HP0 UT SH1 TB4 TBW TBO NAL AL SEE 25283-01 C97 AL HT19 S19 S- HT- UT LE12 LE7 TRB TLT ALB BB ALA CK7 NK LE THRU ALL NORM. HP- REL'S

3T OF SIN RELAY

TERMINATING MARKER CKT. SD 25283-01 166, 479

TERMINATING MARKER

P. B. X. ALTERNATE NUMBER GROUP ALLOTTER

NO. 1 CROSSBAR

OS 527-1

5 SHEETS, SHEET 3

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38-Y-4235 5 SHEETS, SHEET 4

DATE	ISSUE
12/24/74	1 BH8

FIG 1
PBX ROUTE RLY SD 25920-01

R-
HPE TB- SH- SH-ST ALC-R
-48 22Ω
TB- SH- SH-ST
TO OTHER TB- RLY
TO TRAFFIC REG CKT
PC R-
3 4T R-
MULT TO OTHER FIG 1 FOR SAME TERM MKR.
RA FIG 2
-48
R- 6 5T
NK2 1 2B
"L"
RA 5 4B
ATB 4 5T
ATB FIG 1, PBX ROUTE RLY
R TMO 1 2 BSA 3B
ASSOC. WITH TERM MKR CKT
MULT TO OTHER FIGS 3 FOR SAME TERM MKR CKT
TO SUCC FIG 3 "L"
ALG- 2 1T
ALG 6 5 4T
ALG- TMO EK
ALG- 1 2B
PBX ALLOTTED GROUP REGISTER RELAY
ALG FIG 3 SD 25920-01
MULT TO CORR FIG 3 FOR OTHER ODD OR EVEN TERM MKR CKTS
MULT TO OTHER FIGS 3 FOR SAME TERM MKR CKT.
P.B.X. BLOCK ALLOTTER CKT. SD 25919-01 FIG 1

-48
BKT FIG 2
BK FIG 2
7 8T RA
NK2 FIG 2
-48 RA 9 10T TO GND O CTS MCA, N.G.C. CKT. "NK"
NK2 1 2T RA 5 6T

SH-
TM9 HN- FH- ST- SH-
2 1T 2 1T 2 1T
6 5T SPL 3 4B LKO
1 2B TM7
7 8B TMBL 7 8B TMB 2 1B YBA
BA 22Ω -48

FIG 2
COMMON CKT. PER TERM MKR CKT SD 25920-01

X ALG
-48 BKT 3 2T
4 3B
2 1B
X "X" -48
BK 1 2 2T
ATB 3 2 1T
MULT TO OTHER FIG 1 FOR SAME MKR
ATB 3 2
4 3B R-
ATB 1B
ATB 4 7B RA
TO TRAF REG CKT
"TLT" "ALG" TO BAT AT WIND OF "BB" RELAY
TO BB CONTACT "BBL"
RA 1 2 3B
XALG 5 4T
TO T.T.L. "XALG"
TO BAT OF RLY "OF"
TRL
"TTB"
TO OFF NORM GND. 4 & 7 TLT RLY "BTLT"
"XL" GND FROM TM7
CONNECTED AS INDICATED

CROSS CONN TO ALG-ST
NG-ST- NG-ST-
ST- NG-ST-
CROSS CONN TO ALG-HB
NG HBO NG HBO
NG HB 23 NG HB 23
NGHB 24 NG HB 24
TO SHEET 5

4 3B CK6
2 1T X5
XHB "XHB"
8 7B MT
2 3B JHA "JHA"
HP- -48
UT -48 RA 8 9B 5 4B
TBO
TB-
HPE -48
ALB NAL
ALA AL
THRU ALL NOR HP- RLYS
SD TRAINING AID
TBO
TB4
CROSS CONN TO ALG-TB
TB4

ALB 8 9T
ALA 2 1B
MT2 2 3B
NFL 2 1T FL 8 7T HPE 4 3B TB- 2 1T SH-
SH-HB ALC-RHB
ALG- 7 8T
ALG HB NG-HB TERM
ALG TB TBO-TB4 TERM
CROSS CONN
NG-ST TERM ALG ST
ALG- R-
4 5 6B 5T TO SUCC FIG 3
1 2T 22Ω -48
MULT TO OTHER FIGS 1 FOR SAME TERM MKR CKT.
TO HNO-4 RELAYS 28 CTS
OFF NORM GND
CK6 6 5B IN 2 1B YBA 2 1T JHA 6 5B ALB 8 7T HPE 1 2T MT3 2 3B TB- 2 1B SH-
SH-TB ALC-RTB
ALA 4 3B
ALG- 7 8B
MULT TO OTHER FIG 3 FOR SAME TERM MKR.

P.B.X. BLOCK REGISTER CKT. SD 25920-01
P.B.X. BLOCK ALLOTTER CKT. SD 25919-01
TERMINATING MARKER CKT. SD 25283-01 ISS. 4 TP

TERMINATING MARKER
P.B.X. BLOCK ALLOTTER CIRCUIT
NO. 1 CROSSBAR
05 527-1
5 SHEETS, SHEET 4

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38-Y-4235 5 SHEETS, SHEET 5

ISSUE	DATE	BY
1	FEB 1969	

FIG 52

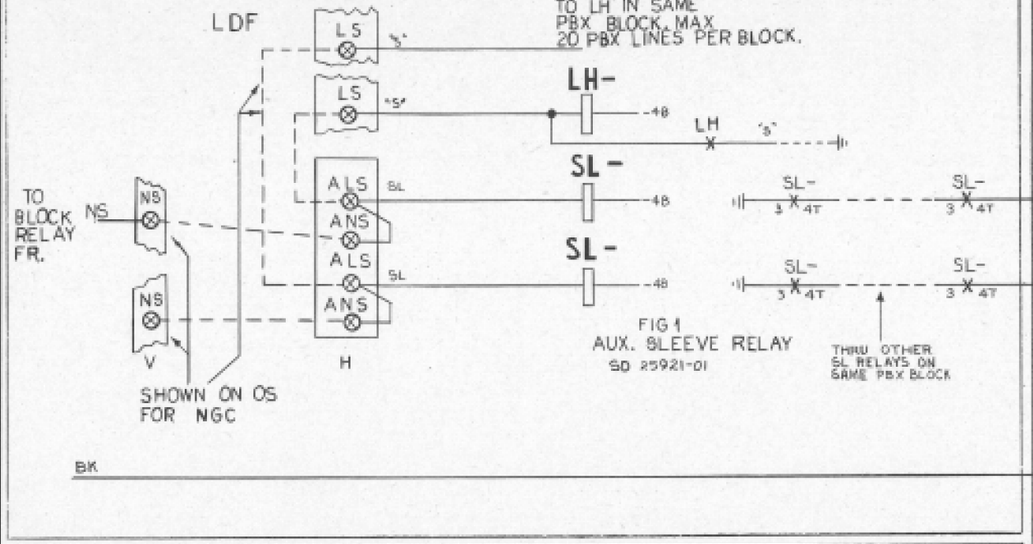
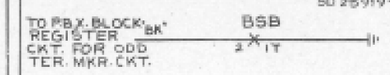
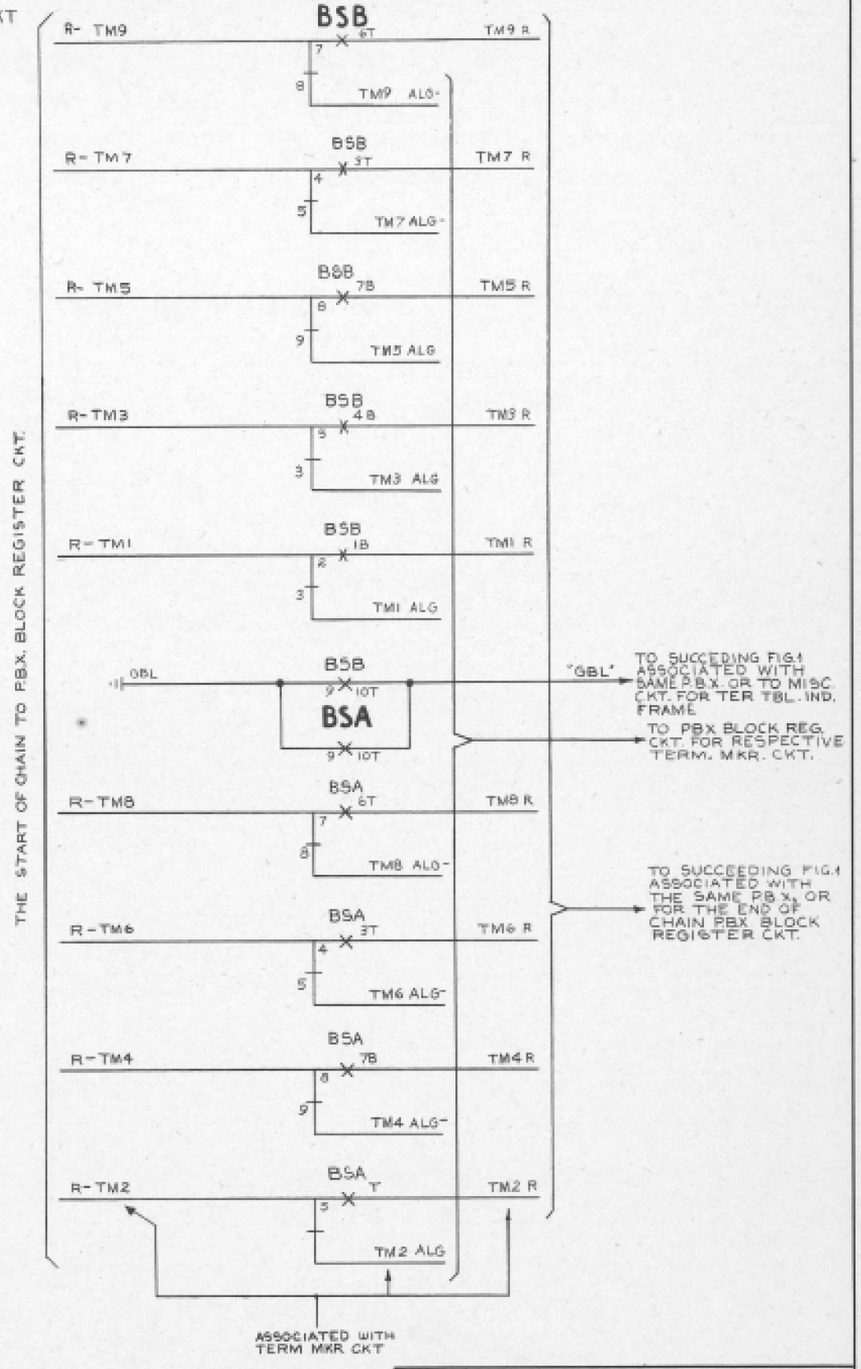


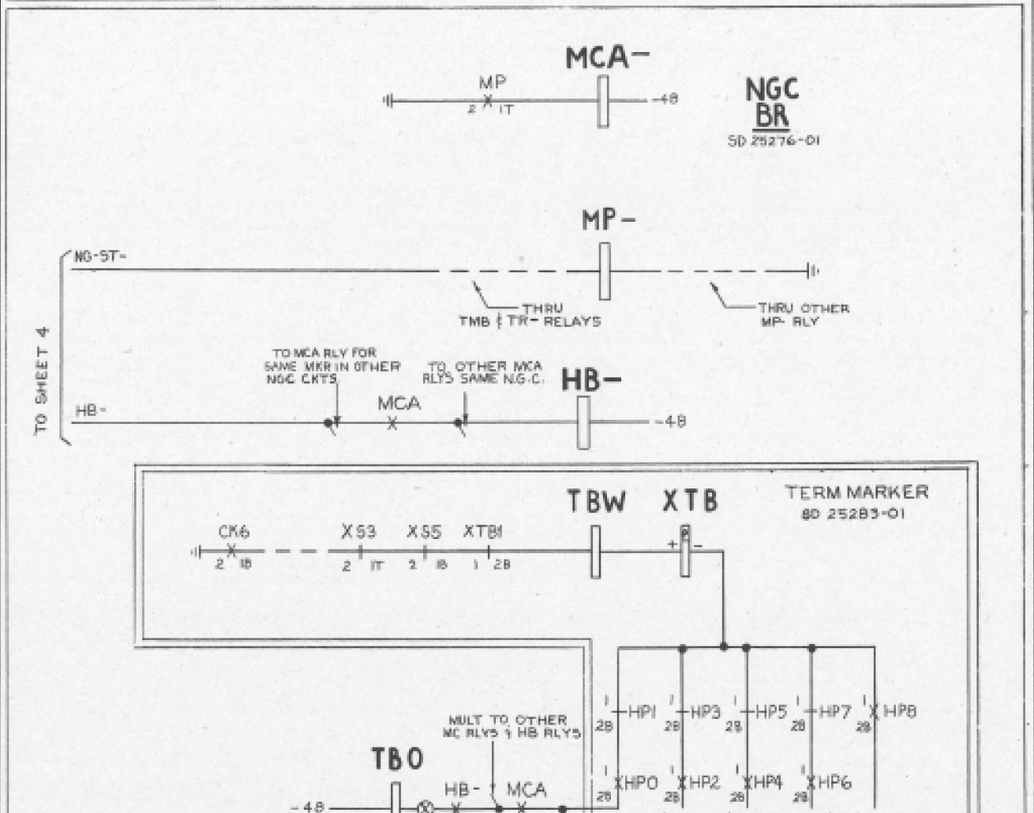
FIG 1
AUX. SLEEVE RELAY
SD 25921-01

THRU OTHER SL RELAYS ON SAME PBX BLOCK

FIG-3
P.B.X. BLOCK ALLOTTER CKT
SD 25919-011







SD TRAINING AID

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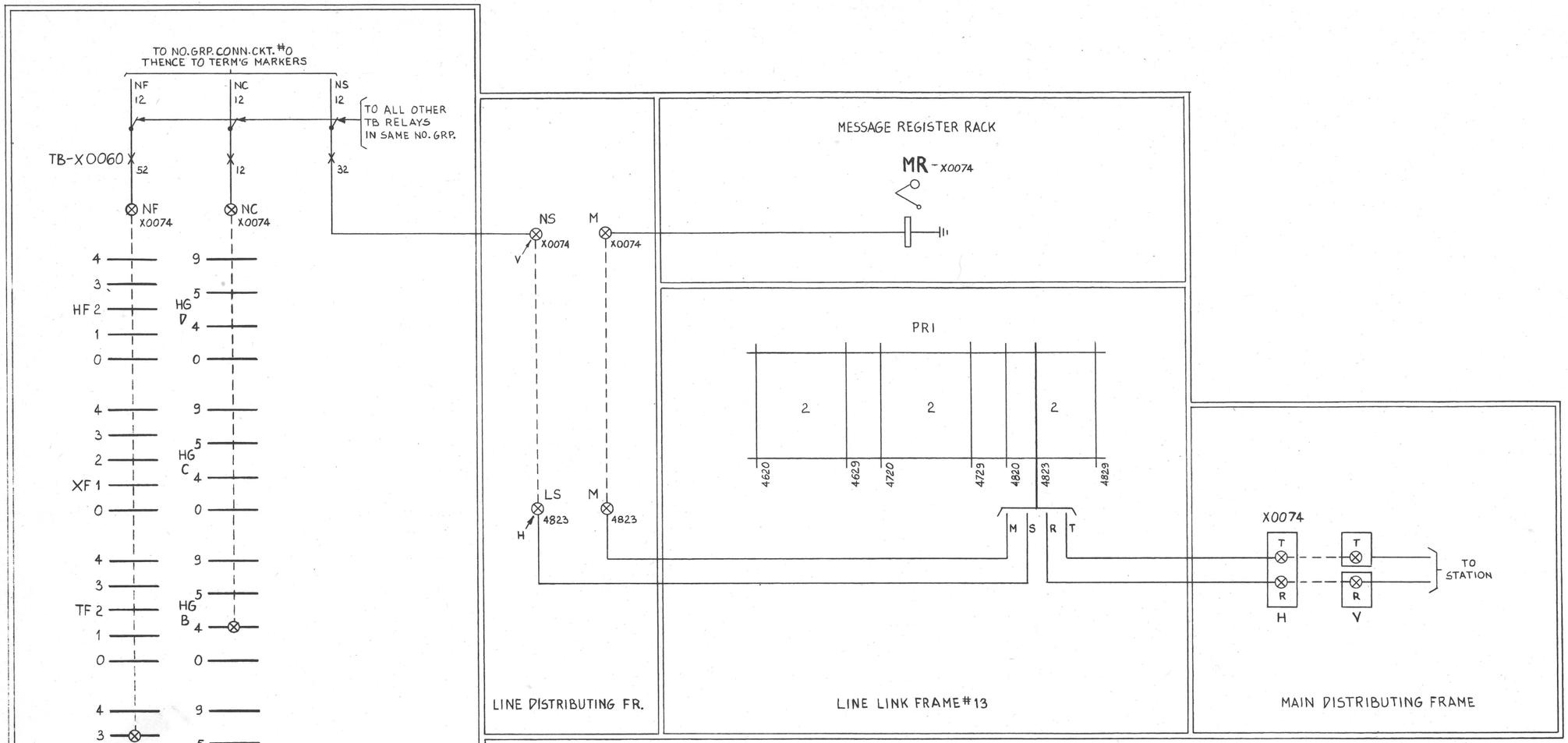
TERMINATING MARKER

PBX BLOCK ALLOTTER CKT.

NO. 1 CROSSBAR

OS 527-1

5 SHEETS, SHEET 5



TERMINATING MARKER

CROSS-CONNECTIONS AND TESTING OF "X" NUMBERS

OS 528-1

2 SHEETS, SHEET 1

NO. 1 CROSSBAR

ISSUE	1	PHG
DATE	2.24.54	

2 SHEETS, SHEET 1

38-Y-4253

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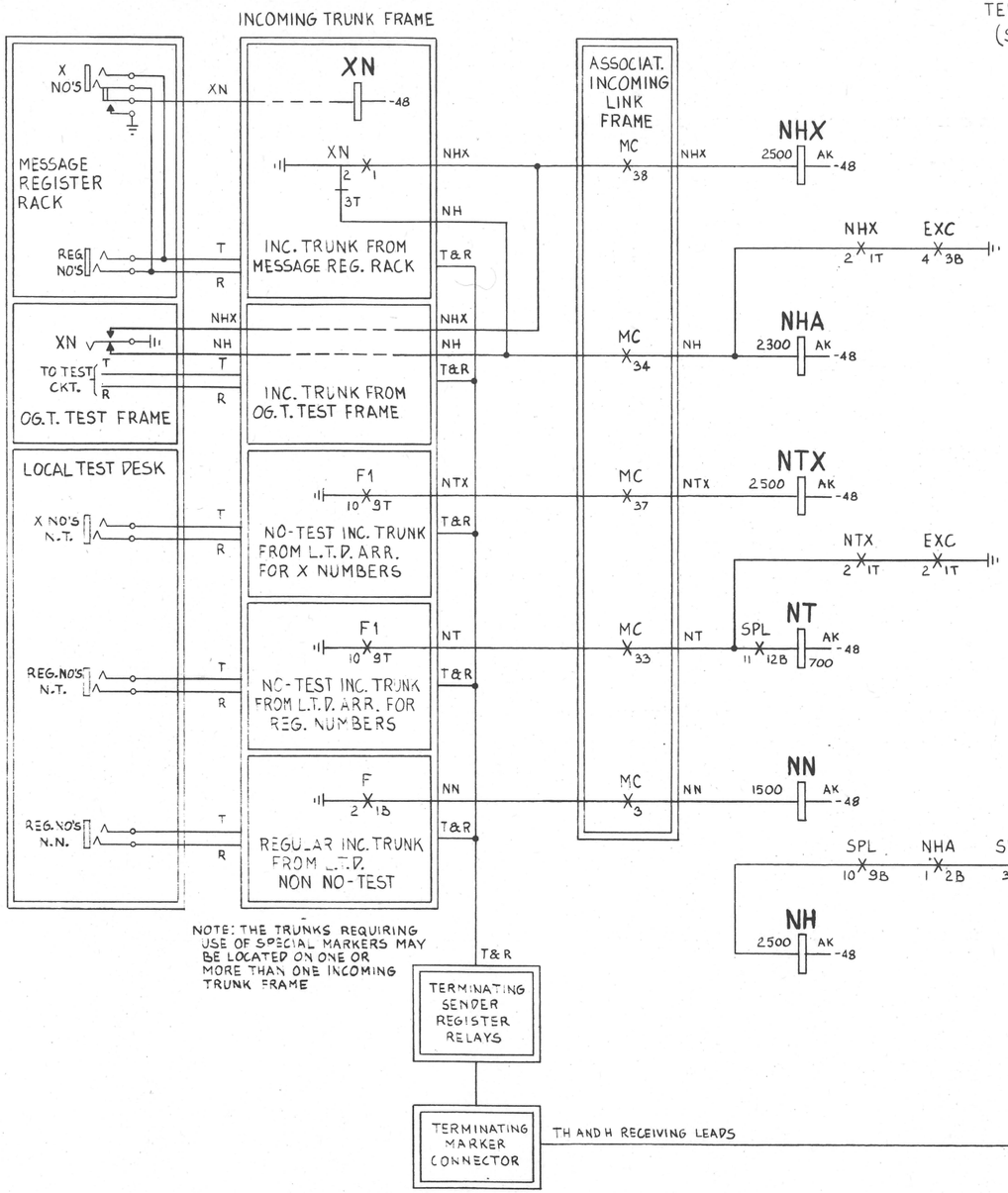
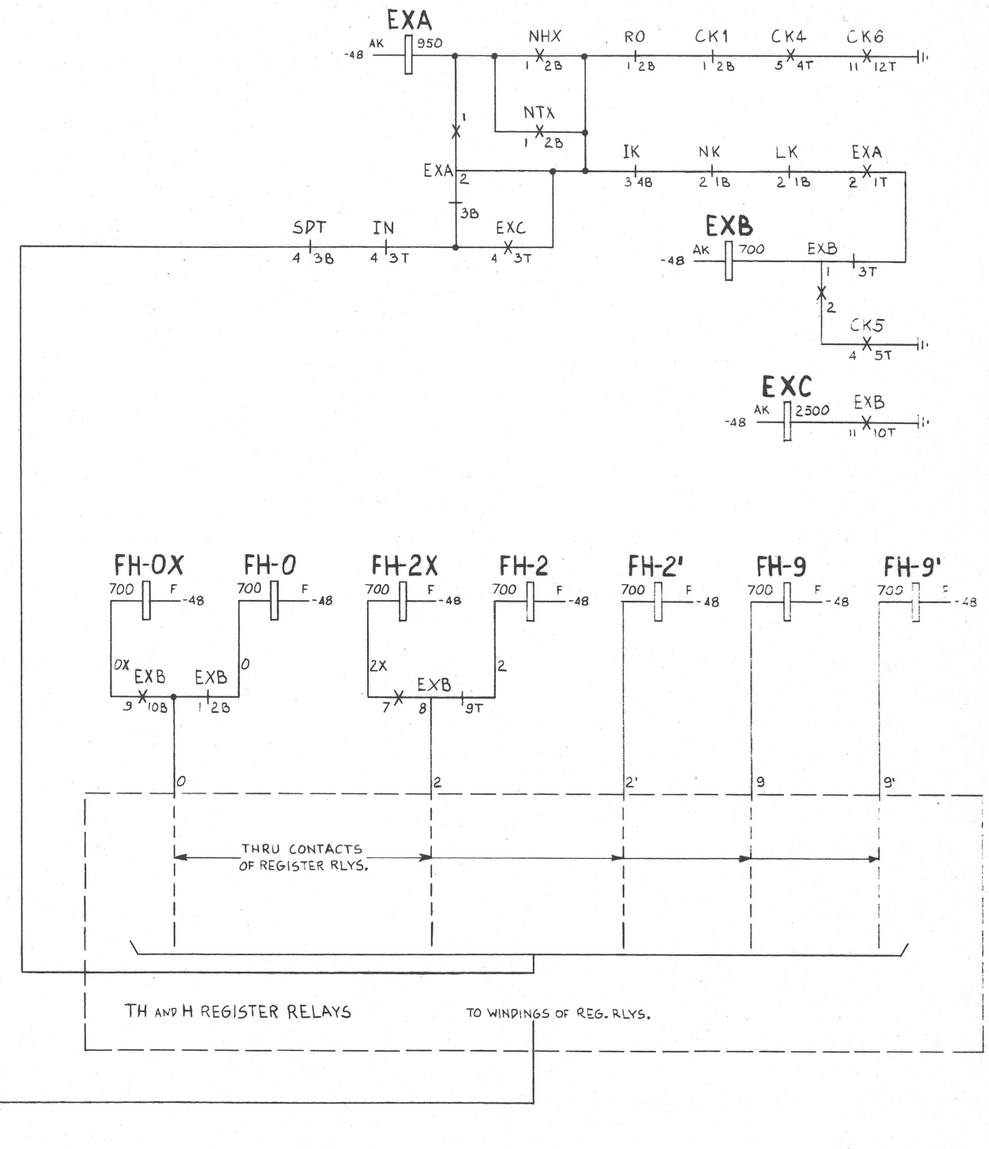
38-Y-4253

2 SHEETS, SHEET 2

ISSUE	DATE	BY
1	2.24.54	R.H.G.



TERMINATING MARKER CKT.
(SPECIAL MARKERS ONLY)



* INCOMING LINK & CONN CKT. "160" SD-25457-01, 155.12D
TERMINAL MARKER CKT. SD-25583-01, 155.47D

TERMINATING MARKER

CROSS-CONNECTIONS AND TESTING OF "X" NUMBERS

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